Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 62, No. 4.
WHOLE No. 997.

RICHMOND, VA., JULY, 1935

$2.00 A YEAR
25 CENTS A COPY

ADVANCES IN OBSTETRICS AND GYNECOLOGY

The following question was recently submitted by the Editor to a number of American obstetricians and gynecologists: "What do you consider the three most significant advances in the field of obstetrics and gynecology during the past ten years?" The MONTHLY believes their answers will prove as interesting to its readers as did the answers to similar questions relating to other specialties published here from time to time.

1. A better understanding of the physiology and pathology of the genito-urinary organs.
2. Adequate demonstration of the superiority and extensive adoption of conservative principles.
3. Clarification of the treatment of malignant diseases.

H. J. Stander, New York, N. Y.

1. The increased knowledge regarding the menstrual cycle and the recovery of the human ovum.
2. Increased knowledge regarding the various hormones with the incidental development of the Aschheim-Zondek test for pregnancy.
3. Increased knowledge regarding diseases of the cervix and vagina including an appreciation of the Trichomonas Vaginalis, and the possibility of an earlier diagnosis of cervical cancer by means of the colposcope.

Carl Henry Davis, Milwaukee, Wis.

1. The increasing recognition of the fundamental importance of prenatal care, and the campaigns for the more widespread application of prenatal care in obstetrical work.
2. The development of the low cervical Cesarean section, which in my opinion is in many ways superior to the classical, especially as regards increased safety from the point of view of infection.
3. Discovery of the various pituitary and female sex hormones, with a consequent revolutionary change in our ideas regarding female sex physiology.

E. L. King, *Tulane School of Medicine*, New Orleans, La.

1. The endocrinal gland discoveries, especially the Zondek-Aschheim Test.
2. The acceptance of the superiority of the low or cervical Cesarean section above the classical.
3. The progress in prenatal care.

J. B. DeLee, Chicago, Ill.

1. The research work which led to the establishment, on a sound basis, of the hormones of the anterior pituitary body and of the ovary.
2. The modern treatment of cancer of the cervix by means of radium and X-Ray.
3. The more general adoption of the low or cervical Cesarean section in treating obstetrical complications demanding abdominal delivery.

Louis E. Phaneuf, *Tufts College Medical School*, Boston, Mass.

1. Biochemical test of pregnancy. (Aschheim-Zondek.)
2. Emphasis on prenatal care.
3. Improved facilities for clinical instruction of medical students and nurses.

Palmer Findley, Omaha, Neb.

1. The widespread adoption and more zealous practice during the past few years of antenatal or, as I like to term it, Preventive Obstetrics.
2. The improved methods of instruction.
3. The application of radium to neoplastic disease, both benign and malignant.

P. Brooke Bland, Philadelphia, Pa.

1. Advances in endocrinology.
2. Hormonal tests for early pregnancy (Aschheim-Zondek, Friedman, etc.)
3. The colposcope. (In my opinion the chief advance which has resulted from this instrument is that it has made us devote more time to careful inspection of the cervix and to prophylaxis of cancer.)

J. P. Greenhill, Chicago, Ill.

1. The organization and function of the American Board of Obstetrics and Gynecology.
2. The classification of the female pelves, by Caldwell and Molloy.
3. The advances in endocrinology and organo-therapy, based on the work of various observers.

Walter T. Dannreuther, New York, N. Y.

THE URINARY OBSTRUCTIONS IN CHILDREN.*

LITTLETON DAVIS, M. D.,
Roanoke, Va.

As the family doctor or the children's doctor is first consulted for the minor symptoms of children, I thought that perhaps you would be more particularly interested in the early symptoms and diagnosis of the urinary obstructions in children from this standpoint. I shall leave the more refined urological methods to my friend, Dr. W. W. S. Butler, Jr., who has been associated with, and helped me with many of these little patients. I would urge the closest attention to early urinary symptoms in small children, for, though they may seem minor and insignificant at first, if left alone may do irreparable harm long before the child seems ill enough to call a physician.

We shall take the term urinary obstruction to mean whatever interferes with the normal flow of urine from the kidneys to the outer end of urethra.

The relative frequency of lesions producing obstruction in children are the congenital defects, vesico-urethral valve deformities, urethral and ureteral strictures, urolithiasis, spastic and paralytic retention, tumors, foreign bodies, adhesions of meatus following circumcision and phimosis. Rarely it may be from an infection with swelling.

The obstructive symptoms may be acute, subacute or chronic, and either temporary or permanent, depending on the cause and the skill and facility with which it may be removed. Prognosis depends on the same factors plus the age of the child.

Until the more recent development of urological instruments for children, making diagnosis easier, these conditions were rarely found in life, and still are comparatively rare in incidence. To show this, I quote from records from the Harriet Lane Home, Children's Clinic, Baltimore, in 1926 (Young's Urology), as follows:

Pyonephrosis two, Hydronephrosis thirteen, Ureteral Calculus one, Vesical Calculus one, Urethral Stricture eleven, Ureteral Stricture four.

Young diagnosed and successfully operated on congenital valve obstruction for the first time in 1913. Young, Frontz and Baldwin reported twenty-six cases in 1919. Frontz collected fifty-six cases in 1927, and Colston has added several since then.

Urolithiasis, although rare in this country, is very common in China and India. Of 5,900 cases, 45 per cent were in children; 95 per cent are under two years old, and nearly all were found at autopsy and not diagnosed during life.

I shall only mention briefly that while I see many tight foreskins in babies, I see many more troublesome mild obstructions from meatus adhesions after circumcision, produced by napkin rub with scab formation at corner of meatus lip. The foreskin evidently affords some necessary protection at this age.

The early symptoms of urinary obstruction vary with the site obstructed, the amount, completeness or incompleteness of same, and its duration before relief.

Symptoms: Renal tenderness transmitted along ureters, tender distended bladder, easily palpable kidneys, increasing pain a few hours after urine is passed, dribbling, overflow of urine, hard thick bladder when small and empty, with blood or pus in urine in cases of stone, retention, dysuria, straining, without loose stools or constipation. In congenital valve obstructions the early symptoms are often confounded with colic. The babies do not gain although well fed; the pain is only moderate and eases after passing of urine. Later, there is more pain, hard thick bladder tumor, dribbling, enlargement of kidneys, pain with tenderness over kidneys and bladder area. Straining, mucous stools, and in the late stages convulsions and uremia are added.

Diagnosis: I believe a careful painstaking general physician can make a reasonably accurate diagnosis as to the cause and site of obstruction in the majority of cases by the clinical symptoms, urine examination and X-ray, the latter especially for calculi. Obstructions from calculi are usually sudden in onset in contrast to the congenital valve obstructions which are slower in development. Infection is more common in urolithiasis than in the valve de-

*Read before the Southwestern Virginia Medical Society, Radford, Va., September 21, 1934.

formities in the early stages. Bladder distention is present only when the obstruction is below the bladder; this is absent in ureteral closure. Any urinary obstruction may simulate appendicitis or intussusception in a child. If the tumor is sub-umbilical, regardless of whether it is in mid-line or not, a catheter should be passed before an operation is attempted. The milder neuro-muscular retention is readily relieved by catheterization and mild alkalization of the urine. Blood is only present in the urine in about 8 per cent of calculi in children. The history is important in foreign bodies.

As the following five case reports so well illustrate the different types of obstruction, I report them in some detail.

Case 1.—T. M., boy, seven years old, seen in consultation for suspected appendicitis. Child showed fever and abdominal pain of two days duration. Right side and sub-umbilical rigidity, tenderness and swelling. No history of previous urinary symptoms. Boy was taken to hospital for further study, and catheterization was advised after a count of 8,000 leucocytes was found. The urine showed 2 plus pus, a trace of albumin, and the next day child went home. All symptoms subsided after emptying the bladder. As there has been no return of symptoms, this was evidently a spastic retention.

The above case well illustrates spasm of bladder constrictor muscles, the pain, temperature and rigidity being due to the temporary damming up of urine.

Case 2.—C. D. P., girl, two years old, had whooping cough for five weeks, high fever and abdominal pain for four days. More pain on moving right leg. Tender from subcostal margin on right side of abdomen to pubis, muscular rigidity at McBurney's point and sub-umbilical area. Urine, 4 plus pus, microscopic blood. White blood count 12,000. X-ray shows small round smooth stone 3 mm. in diameter in right ureter one and one-half inches above bladder. On the usual treatment for a pyelonephrosis the symptoms subsided in a few days, and the urine cleared in three weeks. The family left town after a few months without further X-rays. The child, I learned, had an operation for appendicitis at about eight years old. She is now about sixteen.

We report the following two suspected cases of congenital valve obstruction and one proven case in more detail.

Case 3.—Baby O. A. No previous history of urinary symptoms. Had abdominal pain for two days with six or seven mucous stools daily with straining. Tender but not rigid over lower abdomen. A tumor the size of an orange and slightly to left of center is pear-shaped and easily felt in the rectum. The child was placed in the hospital and a catheter placed in bladder for drainage. No fever and no pus at first. The catheter was removed from time to time but obstruction always returned. After about a week, infection with temperature developed, which subsided in about three weeks. The child left the hospital without fever but with still some dysuria and died about a year later, from what cause I do not know as I lost touch with the family.

Case 4.—S. H. H., four-year old boy, normal weight for age and height. Had been complaining for several weeks of slight difficulty in voiding. Bladder full and enlarged and apparently thickened when empty. No enlargement of kidneys palpable. Bladder empties only with much effort, and does not empty with hand compression. There is no dribbling or overflow noted. The urine is normal. This child was seen by both of us several times over a period of some weeks, had several bougie dilatations, appeared to be doing well, and, as parents moved away, we lost track of him. He is now nineteen years old.

Case 5.—Baby, aged four months old, seen first for respiratory infection in upper air passages. Gave history of crying spells which the mother thought was colic. Had fever for two days from this infection. Boy weighing ten and one-half pounds, is one pound under weight. Breast fed, plentiful supply, poor appetite and does not take all of food. I thought at that time that the spleen was very large, and, as there was much nasal mucus, had baby come to office for Wassermann. This was negative as was also the history. At that time I found the bladder full, distended and hard. It was emptied by compression and still remained the size of a lemon and hard. The left kidney which I had taken for the spleen at first is about 2 cm. above iliac spine. Right kidney not palpable. At this time Dr. Butler saw the baby and we decided to use mild stretching with small bougies as we prob-

XUM

ably had a congenital valve obstruction. The baby did well for about three months, making an almost normal gain until about mid-July, when he developed fever 103, pus 3 plus in the urine, vomiting, refused all food and was put in hospital because of a rapid dehydration and weight loss. At this time the left kidney was enlarged to the iliac spine, and the right kidney became enlarged and easily palpable. Bladder distention ceased and urine almost stopped until baby received peritoneal and subcutaneous fluids, when distention again became troublesome. Bladder could, however, be relieved by compression without catheter. Convulsions from uremia, followed by stupor and coma, resulted in death about eleven days from the beginning of the fever and vomiting.

Two very important questions come to mind in this case: should one give, or rather force fluids in the usual way when such fluids cannot be removed by the urinary tract? The other question as to whether or not we ought to operate on a baby this young in this condition in mid-July is a very mooted one.

I wish to thank Dr. Butler for his assistance in this case and for the preparation of the specimen, and also Dr. Chas. Irvin for the painstaking care with which he dissected out the bladder, ureters and kidneys intact.

In conclusion, we are glad to be able to add this last as a proven case of congenital valve obstruction to the small number already reported and the four other cases of urinary obstructions in children to illustrate the symptoms and diagnosis of these more rare of the urological diseases in children.

Medical Arts Building.

URETHRAL OBSTRUCTIONS IN CHILDREN.*

W. W. S. BUTLER, JR., M. D.,
Roanoke, Va.

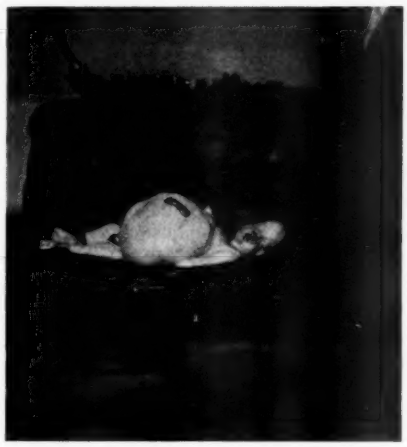
The cases which Dr. Davis and I are reporting represent a type which is far more common than one would think on first hearing of it. The first reported autopsy of congenital valve dates as far back as 1802 and at intervals up to 1913 when Young first made the diagnosis in a living subject by examination with a urethral instrument. Hinman and Kutzman, in 1925, report fifty cases with thirty-one under ten years. Prior to 1919, twenty-four had been found at autopsy and only three in a living subject, and since that time they report eight at autopsy and eighteen in the living subject. Of the eighteen, sixteen were operated upon with no surgical death. Young reports, in 1925, twelve cases with eight operated on and well, and the other four not operated on and dead. In 1929 Young and McKay report nine cases seen since 1919, with six cures and one incontinent. These reports contrast strongly with the first twenty-two reported by Young, Frontz and Baldwin, with twenty-two deaths.

*Read before the Southwestern Virginia Medical Society, Radford, Va., September 21, 1934.

Of the cases with congenital valve to date, two-thirds are reported under ten years of age. A. Randall reports a case in a baby ten days old which he thinks might have been saved if cystostomy had not been refused. At autopsy, such advanced renal destruction was present that the condition must have existed in utero. Young and McKay feel that this condition accounts for many still-births and in others who live only a few days. When an emaciated child is born with a distended abdomen and palpably enlarged abdomen and kidneys, the diagnosis is certain. Dr. Geo. Hurt mentioned to me having recently delivered at the Jefferson Hospital a dead foetus with a tremendous abdomen which became flat on catheterization. Undoubtedly this is due to congenital valve. The onset of symptoms may not be noted before infection occurs, so that one-third are above ten before the condition is recognized, and several are reported fifty-seven and above.

The clinical side—that is, the symptoms—has been discussed by Dr. Davis. Suffice it to say obstruction in a child follows the same course as in

th aged. They fall in two groups—the toxic symptoms of renal failure, anorexia, nausea, anemia and on to uremic coma, and the local symptoms of infection and obstruction and difficulty in voiding and frequency or enuresis.



This case could not be delivered and it was noted that no amniotic fluid was present. When it was seen that the child was dead, its abdomen was punctured and 1000 c.c. of fluid, which proved to be urine, was withdrawn. After delivery, the bladder was refilled and this photograph taken.

Obstruction other than valvular produces the same symptoms. Two years ago an under-nourished boy, ten years old, was brought to the Roanoke Hospital Dispensary unable to void. A large mass was felt extending to the umbilicus. On catheterization by Dr. W. H. Saunders, resident at that time, fourteen ounces of urine were withdrawn. After leaving in a retention catheter for several days, a stone the size of a pea was removed from the posterior urethra with complete relief of the retention. This boy had had pus and frequency since four years of age. H. S. Brown, of Tulsa, Okla., reports a case ten years of age with enuresis since birth due to congenital stricture in the anterior urethra, and another eighteen years of age, with frequency for years, showing trabeculated bladder and a diverticulum and valves extending from the internal meatus to veru. Both were cured by dilatation.

Other causes of enuresis are cord lesions and, in children particularly, spina bifida. Mertz and Smith report nine personal cases one and a half to eight years of age, with seven in females and two in males, and thirty-four in the literature, incontinence with bladder retention occurring in fifteen. Twenty-four were operated on with twelve cures, and six improved. They feel that the dysfunction is due to pressure. We have attending the clinic at present a case of spina bifida in a child of eight months which has been shown by Dr. Spessard. There is no abdominal tumor and no urinary abnormality at present.

Livermore reports a hydronephrosis due to the obstruction of a hypertrophied verumontanum.

The specimen removed by Dr. C. M. Irvin, we have here from the case reported by Dr. Davis, shows first the tremendously thickened bladder wall. It is this muscular constriction which prevents the ureter from emptying itself and dilates the ureter and kidney pelvis. This view (Tandler and Zuckerkandl) contrasts with that of Young who regards the ureter as being overpowered by repeated high pressure in the bladder. If due to pressure only, bilateral regurgitation into the ureters would be more common than a unilateral. Bumpus, in 527 cystograms of cases having a residual urine, found a reflux in only twenty-five. The dissection does not extend far enough forward to show the valve but shows beautifully the dilated ureter and pelves.

If I had not been deluded into a false security by the temporary periods of improvement in this child, and had insisted on a suprapubic drainage, I believe there would have been a good chance of its survival.

A short time is left to discuss the diagnosis of the condition. In addition to local and constitutional symptoms, we have a palpable kidney and bladder. The diagnosis can be confirmed by determination of the blood urea which gives an excellent estimate of the renal function. The relative function of the two kidneys and localization of the obstruction can be shown by intravenous neoskiodan and by retrograde cystograms. Age is no contraindication to intravenous neoskiodan. Campbell reports its use in children with phthalein 5 per cent in two hours.

The details of treatment are purely mechanical and not to be taken up now. The prognosis in any case will depend on the duration of the condition and the consequent renal damage from pressure and infection just as occur in prostatic hypertrophy.

To summarize: The early incidence in life, the insidious nature of urethral obstruction gradually causing irremediable damage and the ease of cure if recognized early, emphasize the extreme clinical importance of the condition and the necessity for

coopera ion between the attending physician and the urologist.

The diagnosis of pyelitis, like that of hysteria, should be made with reservations. If pus persists more than a month, a urological examination should be made. While infections of throat or constitutional conditions may introduce bacteria into the blood stream which are eliminated by the kidney, the persistence of pus or bacteria means stasis in the urinary tract. This can usually be demonstrated by intravenous or retrograde cystograms with little discomfort to the patient. A fresh urine specimen obtained after cleansing the penis or catheterizing the female should be carefully stained or cultured to determine the type of infection, while any indication of a chronic or acute toxic condition can be determined accurately by a determination of the blood urea. This information can be gotten from any child with little or no danger, and then the necessity of cystoscopy determined.

SUMMARY

1. Urethral obstruction in childhood is not a pathological curiosity but a fairly common condition, and Dr. Davis and I report eight cases almost from memory.

2. Two-thirds of them are cured if recognized before an acute infection or uremia occur.

3. The diagnosis can usually be made on the history and physical findings with aid of the X-ray, so that the trauma of a cystoscopy is rarely necessary. Congenital valves, stricture, spinal cord injury or defect, and stone are reported.

4. The obstruction may be partial or intermittent, producing a gradual onset of symptoms which may occur at any time from before birth to fifty-seven years.

REFERENCES

1. Young, Frontz and Baldwin: Common Causes of Urinary Obstruction in Male Children, *So. Med. Jour.*, Vol. 15, p. 570, July, 1922.
2. W. A. Frontz: Congenital Valve of Post-Urethra, *International Surg. Digest*, Vol. 3, p. 67, February, 1927.
3. Young and McKay: Congenital Valve in Post-Urethra, *Surg. Gyn. and Obs.*, April, 1929, Vol. 48, p. 509.
4. H. O. Mertz and L. A. Smith: Nerve Dysfunction of Urinary Tract, *Jour. Urology*, Vol. 24, p. 41.
5. Geo. Livermore: Pathology of Posterior Urethra, Vol. 13, p. 111, January, 1925.
6. H. A. R. Krentzman: Causes of Renal Pressure in Obstructive Lesions of the Urethra, *Jour. Urol.*, Vol. 19, p. 199.
7. Hinman and A. A. Kutzman: Congenital Valve Obstruction of Post-Urethra, *Jour. Urol.*, Vol. 14, p. 71, August, 1925.
8. A. Randall: Congenital Valve of Post-Urethra, *Jour. Urol.*, May, 1930, Vol. 23, p. 567.
9. Henry S. Brown: Congenital Obstructions of Posterior Urethra, *Jour. Urol.*, Vol. 23, p. 275, February, 1930.
10. Meredith F. Campbell: Post-Urethral Valve in Infancy, *Jour. A. M. A.*, February 21, 1931, Vol. 96, p. 592.
11. M. F. Campbell: Chronic Pyuria in Infancy, *Med. Record*, N. Y., July 17, 1929.
12. M. F. Campbell: Cystography in Infancy, *Amer. Jour. Diseases of Children*, February, 1930, Vol. 39, p. 386.
13. M. F. Campbell: Intravenous Urography in Children (304 Cases), *Jour. Urol.*, Vol. 32, No. 1, July, 1934.

SOME EXTRA UTERINE COMPLICATIONS OF PREGNANCY.*

H. HUDNALL WARE, JR., M. D., F. A. C. S.,
Richmond, Va.

Pregnancy predisposes to certain diseases, and aggravates others. It is wise to remember that the pregnant woman, while more susceptible to certain complications, may also suffer from any disease which occurs in the non-pregnant woman.

Frequently focal infections in the teeth and tonsils are overlooked early in pregnancy, only to be treated after some other complication has occurred. We advise all women to consult their dentists early in pregnancy, and recommend the removal of in-

*From the Department of Obstetrics, Medical College of Virginia.

Read before the sixty-fifth annual meeting of the Medical Society of Virginia, at Alexandria, October 9-11, 1934.

fected teeth that cannot be saved. Cavities should be filled to prevent rapid decay, which is common during gestation. The addition of small doses of cod liver oil and calcium phosphate to the patient's diet safeguards the teeth and protects the gums.

If the tonsils are infected and should be removed, operation can be performed with more safety around the fourth month than in the early or late months of pregnancy. Local anesthesia is probably best, but ether may be used.

Thyroid dysfunction during pregnancy has been investigated in recent years. The relationship of the thyroid to the sex glands has been observed since the early records of medicine, but its nature is still an unsolved problem. Enlargement of the thyroid during pregnancy has been observed frequently, and it is probably due to the increased metabolic demand associated with pregnancy and lactation.

Pregnancy may incite a true hyperthyroidism, but spontaneous remission is more common in the patients who first exhibit thyroid symptoms during pregnancy.

Basal metabolism studies are of great importance both in determining hyperthyroidism and the proper dose of thyroid for patients with hypothyroidism.[1]

Administration of the proper amount of thyroid to patients with hypo-function will increase fertility, decrease the frequency of abortions and the danger of hemorrhage in some patients, and increase the chances for a normal healthy baby.

Many patients with mild hyperthyroidism may be easily carried through pregnancy and lactation on small doses, five drops twice daily, of compound solution of iodine.

The treatment of thyroid disease during pregnancy is the same as in the non-pregnant patient. If severe manifestations develop due either to pressure, or hyperthyroidism, pregnancy is no contra-indication to operative interference by a well-trained surgeon.

Recently I attended a patient with hypothyroidism, and successfully carried her through pregnancy and labor. She was never able to approach normal either in the way she felt or by basal metabolism studies, on less than ten grains of thyroid daily.

Another patient with a toxic adenoma was operated upon at the third month of pregnancy and has improved constantly. She is now four months pregnant.

Appendicitis: This complication is at times a difficult one to diagnose, and delay greatly increases the dangers associated with it.

To quote Maes[2]: "Appendicitis in pregnancy in its milder manifestations is little more serious than it is in the non-pregnant woman, though its potentialities for harm are far greater, and the wisdom of delayed operation is therefore more questionable. Appendicitis in its acute manifestations, however, is exceedingly serious, and there is even less justification for temporizing with it than there is in the non-pregnant state."

C. Jeff Miller,[3] in a series of 239 fatal cases of appendicitis, found that less than half exhibited the common symptoms of pain, nausea and vomiting, and localized tenderness.

Nausea and vomiting during early pregnancy are not unusual. Pain in the lower abdomen is common in all stages of pregnancy. These may confuse the picture.

Consideration of the changes in anatomical relationship of the appendix during pregnancy are important. Baer[4] and his co-workers at the Michael Reese Prenatal Clinic made repeated roentgen observations on seventy-eight normal patients to determine the anatomic relations of the appendix at the different months of pregnancy. They found that the base of the appendix is gradually displaced upward after the third month of pregnancy, reaching the level of the iliac crests by the end of the sixth month.

After the tenth day post-partum the base of the normal appendix is usually at the same level as in the normal non-pregnant woman.

Parity apparently plays no part in the diagnosis of this complication. The stage of gestation is important because appendicitis is both more frequent and more dangerous as pregnancy progresses. Various workers have estimated that advanced appendicitis and rupture are from three and one-half to five and one-half times as frequent in pregnant as in non-pregnant women, due undoubtedly to delay in diagnosis.

Maes[2] states "the history of previous attacks is perhaps the most valuable single point in the making of a diagnosis."

Pain, nausea and vomiting, often tenderness over the appendix, and frequently fever, are all important.

After quickening, foetal movements frequently cause discomfort. An increase in the pain asso-

XUM

ciated with these movements has been observed by some patients with appendicitis.

Laboratory tests unfortunately give little aid in the diagnosis of appendicitis during pregnancy. During normal labor the white cell count usually increases, with an average of 18,000, but varying from 9,000 to 34,000 according to DeLee.[5] He also states the differential count shows an increase in the polynuclear neutrophiles. The maximum increase is observed toward the end of labor and rapidly decreases during the first twenty-four hours after delivery, but usually requires several days to return to normal.

Appendicitis may easily be mistaken for ruptured ectopic pregnancy or ovarian cyst with twisted pedicle. Operation is necessary in all three conditions and a mistake as to which condition the patient has should not change the treatment.

Pyelitis is the most important disease to be differentiated. It is most common on the right side. Polak[6] has pointed out that in appendicitis the sequence is pain, later fever and rarely chills, whereas in pyelitis it is chills, fever and pain. In pyelitis pain and tenderness over the involved kidney are frequent, and pus in the urine may frequently clarify the picture. However, it is wise to remember that an acutely inflamed appendix in close proximity to a ureter may often cause pus cells in the urine. In doubtful cases a cystoscopic examination will usually settle the diagnosis.

Operation for a mistaken appendicitis is better than the avoidance of operation because of a mistaken pyelitis.

While some surgeons prefer a McBurney incision, and others a right rectus, all agree that an unruptured appendix should be removed immediately.

Wilson[7] advises the Porro operation for a case late in pregnancy with ruptured appendix. However, the majority of writers advocate conservatism, that is, drainage of the abscess, large doses of morphine and plenty of fluid by clysis and intravenous methods, with delivery from below if the patient goes into labor.

I have observed ten cases of appendicitis in pregnant women. One had a ruptured appendix during the third month of pregnancy. She later aborted but recovered. Another patient was operated upon at term. An acutely inflamed but unruptured appendix was removed, and the abdomen closed without drainage. This patient went into labor three days later, and I delivered her with mid-forceps shortly after the cervix was fully dilated. She had an uneventful recovery until three weeks after delivery, when she had a sudden vaginal hemorrhage of probably 300 c.c. of blood. Examination revealed the cervix still 1 cm. dilated. She was curetted and a small piece of placental tissue 1 cm. by 2 cm. removed. She had no further trouble.

It is possibly true that uterine contractions may tear loose adhesions which have walled off a ruptured appendix, but not all patients go into labor and a Porro operation is a major operation even in clean cases. I believe it unwise to interrupt a pregnancy or remove a uterus simply because a patient has a ruptured appendix.

Pyelitis: Probably the first published description of pyelitis as a complication of pregnancy was by Smellie in 1752. An enormous literature has accumulated on this subject.

It is probable that pregnancy predisposes to pyelitis. During the latter half of pregnancy, the foetal head may compress the ureters at the pelvic brim, but the work of Hofbauer[8] has shown the constriction of the ureter is below the pelvic brim, and usually close to the bladder. We have seen two cases at autopsy where the constriction just outside the bladder was so great it was difficult to pass a small probe through the ureters.

This obstruction has been explained by Hofbauer as a result of hypertrophy of the musculature of the bladder and proximal portion of the ureters, coincident with the hypertrophy of the uterine muscle.

Cornell and Warfield[9] have found dilatation of the ureters frequent in pregnancy. As early as the third month a definite increase in dilatation may be observed, usually more pronounced in the right ureter than the left. These workers were unable to visualize satisfactorily the pelvic portion of the ureters.

The mode of entrance of bacteria to the kidneys is a subject of controversy. Two avenues of entry are (1) ascending infection along the ureteral lumen, and (2) infection by way of the blood stream.

While bacteria may pass through the kidneys without causing a definite infection, it is probable that most pyelitis is of haematogenous origin and occurs more frequently in the presence of ureteral dilatation or stricture with poor drainage.[10]

Some cases of pyelitis are undoubtedly due to a flare up of an old infection which may have occurred even in infancy.

Focal infections, especially in the teeth and tonsils, often cause pyelitis.

Vesical irritability, elevation of temperature, sometimes high, often irregular, and associated with chills, may give the first evidence of infection. Pain in the kidney region and marked tenderness in the costo-vertebral angle over the kidney involved are perhaps the most diagnostic findings. Tenderness frequently extends downward along the course of the ureter. Pus in the urine and leucocytosis are usually observed. Renal tenderness is, I believe, a most useful sign.

Pyelitis may easily be confused with appendicitis, and in the early months of gestation ectopic pregnancy must be considered. In districts where malaria is common, pyelitis is sometimes unrecognized until the patient fails to respond to quinine therapy.

Treatment: When possible, prevention is best, and the correction of foci of infections in the mouth, throat, and other parts of the body, will reduce the incidence of pyelitis.

A patient seen at the onset of an acute pyelitis should usually be treated by the use of liberal amounts of water. If nausea appears, fluids must be given by venoclysis, hypodermoclysis or proctoclysis.

Rest in bed is essential. Free elimination by bowel is important, and any tendency toward constipation must be corrected, to decrease the migration of colon bacilli from the bowel to the blood stream.

Postural treatment may be of value in some cases. The patient's position may be changed by elevating or lowering the foot of the bed. Frequent use of the knee-chest position has been advocated by other workers. Lying upon the side opposite the infected kidney seems beneficial to some cases.

This paper cannot include any full discussion of the use of drugs. We have, I believe, used all of the commonly prescribed urinary antiseptics. I believe in changing the reaction of the urine every few days. During the acid period we use hexamethylenamine one gram (fifteen grs.) three or four times daily.

To alkalinize the urine, sodium bicarbonate gr. thirty every four hours is usually effective.

Recently I have seen pituitary extract used, as advocated by Hofbauer, and I have been told the results are good. We have no experience with this treatment.

Any patient on our service who does not respond to the medical or postural treatment within twenty-four to forty-eight hours is seen by the urological service. A cystoscopic examination is usually made and catheters passed to the kidney pelves. The result of this treatment is frequently phenomenal, and I sincerely endorse it. Contrary to the statement in some textbooks, we have observed no ill effects in more than one hundred cases treated by this method, with the catheters left in the ureters from twenty-four hours to five days. Of course, the catheters must be kept open and should be removed if they do not drain or the patient goes into labor. We have had two abortions in the last fifty cases, probably the result of the toxemia associated with the pyelitis and not due to cystoscopic examination.

I believe that the early use of ureteral drainage will actually reduce the incidence of abortions and premature labors, because it reduces the toxemia and lowers the maternal temperature. Furthermore, this treatment decreases kidney damage.

We have successfully carried through pregnancy several patients whose former pregnancies had been terminated by therapeutic abortions because of pyelitis which failed to respond to medical treatment. One patient was first seen by me early in her third pregnancy. At that time she had an acute pyelitis with septic temperature and frequent chills. She stated both former pregnancies were interrupted before the sixth month because of pyelitis. She had never had a cystoscopic examination.

This patient was referred to a urologist, and after a cystoscopic examination and ureteral drainage she improved rapidly. Because of ureteral strictures the ureters were dilated several times during the pregnancy. She was delivered at term of a normal living child. A fourth pregnancy occurred and terminated successfully at the ninth month, with no symptoms of pyelitis during either the prenatal or postnatal period.

Therapeutic abortion because of pyelitis is seldom indicated or necessary if the ureters are drained early.

XUM

SUMMARY

The time allotted one paper necessitates a discussion of only a few of the extra uterine complications of pregnancy.

Focal infections should be corrected not only because of their influence on the complications discussed in this paper, but also because of their relationship to cardiac disease, the toxemias of pregnancy, and the patient's general physical condition.

Spontaneous remission of hyperthyroidism occurring in pregnancy is common after pregnancy and lactation.

Pregnancy is no contra-indication to operation for thyroid disease in its severe forms.

Pyelitis is both a frequent and serious complication of pregnancy. Therapeutic abortion is seldom necessary for this condition if early cystoscopic examination and ureteral drainage are instituted.

Appendicitis in pregnancy requires the same treatment as in the non-pregnant woman.

REFERENCES

1. Davis, Carl Henry: *Amer. Journal Obstetrics and Gynecology,* Vol. 24:607, 1932.
2. Maes, Urban; Boyce, B. S., and McFetridge, E. M.: *Amer. Journal Obstetrics and Gynecology,* Vol. 27:214, 1934.
3. Miller, C. Jeff., quoted by Maes, Urban: *Amer. Journal Obstetrics and Gynecology,* Vol. 27:214, 1934.
4. Baer, J. L.; Reis, R. A., and Arens, R. A.: *Journal Amer. Medical Association,* Vol. 98:1359, 1932.
5. DeLee, J. B.: Principles and Practice of Obstetrics, 5th Edition. W. B. Saunders Co., Philadelphia, 233, 1929.
6. Polak, J. O.: Proc. Inter-State Post. Grad. M. A., North America, 1928, p. 234, 1929.
7. Wilson, R. A.: *Surg., Gynec. and Obstetrics,* Vol. 45:620, 1927.
8. Hofbauer, J.: *Bull. Johns Hopkins Hospital,* March, 1928, Vol. XLII, No. 3.
9. Cornell, E. L., and Warfield, C. H.: *American Journal Obstet. and Gynec.,* Vol. 23:755, 1932.
10. Danforth, W. C.: *Obstet. and Gynecology,* Curtis. W. B. Saunders Co., 1933. Vol. 1, page 729.
11. Boyce, F. F., and McFetridge, M. A.: *American Jour. Obstet. and Gynec.,* Vol. 27: 214, 1934.

DISCUSSION

DR. GREER BAUGHMAN, Richmond: Dr. Ware has very wisely limited the discussion of extra-uterine complications of pregnancy to those that are more frequently met with and has ably handled his subject in such a way that there is little left for me to say except to amplify what he has said.

Pyelitis is the most common of the extra-uterine complications of pregnancy and the puerperium for that matter. Fortunately it is rather easy to diagnose except where it complicates or is complicated by appendicitis or some other acute right-sided abdominal condition. I say right-sided advisedly because the pyelitis of pregnancy starts so frequently on the right side that when I find similar signs on the left side I think that I am dealing with a stone in the kidney or ureter.

The malaise, temperature, pain referable to the ureter or the kidney, the blood picture, tenderness, etc., may be absent, but the findings of clumped pus cells in an acid urine that has been catheterized will be present if we examine sufficient number of specimens, unless the ureter is completely blocked. As a final differentiation we have the cystoscope.

In the mild cases, switching the urine from acid to alkaline and then back again to acid associated with a high iron, vitamin, and caloric diet, with an enormous amount of water by mouth, will usually clear up the symptoms. The severe cases will usually clear up so far as symptoms are concerned with catheter drainage of the ureters. Whether the urine ever becomes bacteria free or pus free is a question. Once in a great while these severe cases have to be aborted. Where we have the pyelitis associated with chills, fever, and severely ill, in almost every instance the infection has travelled from the pelvis to the parenchyma. Here the question of whether the woman should be allowed to become pregnant again comes up, and, if pregnant, whether she should be aborted in the interest of her longevity. A careful study of her kidney function, cystoscopy, pyelograms and a careful summing up of the case from every angle is the fair way to come to a conclusion.

The thyroid is probably next in frequency as a stumblingblock in pregnancy. Halstead found, in 1896, that if the thyroid of a pregnant dog were removed the puppies were all born with goitre. Dr. J. Earl Else, with a large experience, found in families where children had goitre that the mothers had a thyroid deficiency at least during pregnancy. A sign of a good pregnancy is a slightly enlarged thyroid. A normal pregnancy will show a rise in metabolism rate so that at the end a plus twenty or plus thirty is about normal. These cases are as a rule without thyroid symptoms.

A low blood pressure associated with rapid gain in weight should always make us apprehensive of thyroid deficiency and should make us check with the metabolic rate to see if thyroid is not indicated.

The dose of thyroid during pregnancy should be lower than we ordinarily give and the cases should be watched very carefully for hyperthyroid symptoms because the tendency in pregnancy is upward so far as the thyroid is concerned.

DR. RICHARD MASON, The Plains: I did not quite understand Dr. Baughman's statement in regard to right-sided pyelitis. Did I understand you, Doctor, to say that if you have these symptoms on the right side you take it for granted that you have a right-sided pyelitis?

With the same symptoms on the left, you take it to be ureteral calculus?

DR. BAUGHMAN: Yes, sir. The pyelitis almost always starts on the right side.

DR. MASON: Is that particularly true of pregnant women, or of all cases?

DR. BAUGHMAN: I do not see the non-pregnant woman much. I am inclined to think that pyelitis is more common in everybody on the right side. I hope somebody will check me on that.

DR. JOSEPH BEAR, Richmond: Dr. Ware has certainly covered the subject in a very broad sense, and there is very little more to be said. There are, however, one or two points that I should like to re-emphasize. The first is the question of surgical intervention during pregnancy. Formerly, it was believed that any surgical intervention during pregnancy would almost invariably bring about either abortion or premature labor. At the present time, however, thanks to the department of anesthesia and the perfected surgical technic, this particular idea has become more or less obsolete, because we now know that almost any complication may arise during pregnancy and surgical intervention does not, as a rule, bring about an interruption of pregnancy.

It was thought in the earlier days that even the extraction of a tooth would interrupt pregnancy. A point which should be strongly emphasized is, that every pregnant woman who presents herself to the obstetrician should be instructed to consult her dentist early and have whatever dental work done without hesitation and fear. Of course, we would not like our patients to occupy the dental chair for several hours, because this would interfere with the nervous balance.

Pyelitis may become a most serious complication of pregnancy. There are, of course, a severe grade and a milder grade. I believe, in the less severe grades of pyelitis it can be combated by the early administration of urinary antiseptics, without the necessity of cystoscopic treatment. In the more severe grades, however, I recommend ureteral catheterization, because it permits a free drainage, and yet does not interfere with the pregnancy. I should like to ask Dr. Ware, however, if the retained catheter in the ureter would not cause subsequent irritation of the ureteral mucosa. Some believe that it does, and that the effect might be rather severe.

In pyelitis one can never tell when the acute symptoms will arise or when the lesser type may become the more severe type. Recently I had a case of the lesser grade of pyelitis in a patient about five months' pregnant. She was given the usual course of treatment and apparently was getting along quite well. Suddenly she developed acute symptoms with severe toxic ileus. Fortunately, during that time she entered into labor and had a precipitate delivery. Recovery was uneventful.

I enjoyed Dr. Ware's paper and the discussion.

DR. WARE, closing the discussion: In answer to Dr. Mason's question concerning the kidney most frequently involved in pyelitis of pregnancy, we have not calculated this in our series of cases. It is, however, a fact that pyelitis occurs more frequently in the right than in the left kidney.

Dr. Bear discussed the question of surgical procedures during pregnancy. I believe surgical operations should be postponed until after delivery and the puerperium whenever possible. Acute disease of the thyroid, gall bladder, appendix, and other structures which indicates immediate operation should have the benefit of operation regardless of the presence of a pregnancy.

Last year I examined a young woman approximately two months' pregnant. She also had a cyst of the right ovary which was about the size of a grapefruit. I advised removal of the cyst. Her home was in another state, and she returned there for operation. Later her doctor wrote me that when he removed the cyst, he decided to remove her appendix at the same time. This necessitated enlarging the abdominal incision, and the appendix, which was not acutely inflamed, was removed with difficulty. Because the surgeon feared an abortion or a hernia in the abdominal incision, he interrupted the pregnancy by abdominal hysterotomy. This type of unnecessary operation I wish to advise you against.

The danger of trauma as a result of ureteral catheters left in several hours or days I discussed in my paper. We feel that our patients have had no bad effects from this procedure and frequently the improvement after ureteral drainage has been amazing. Catheters should always be removed if the patient threatens to go into labor.

I will mention a case I recently saw in consultation, which demonstrates how difficult it is at times to make a correct diagnosis. A white woman, five months' pregnant. Her temperature was 104° F. and had been above 102° F. for seven days. She had a definite mass in the right upper quadrant of the abdomen, with marked tenderness and rigidity of the anterior abdomen over this area. Her physician stated the mass appeared about one week before she entered the hospital, and had increased in size and tenderness each day. She lived in a malaria district. We were unable to make out any enlargement of the spleen. Two blood smears for malaria showed no parasites. A surgeon was called in consultation. All agreed the patient probably had acute gall bladder disease. The abdomen was opened under local anesthesia. The gall bladder was distended but normal, the liver markedly enlarged. The abdomen was closed immediately. After two days a blood smear showed estivo-autumnal malaria. Treatment for malaria was commenced and the patient improved rapidly.

XUM

THE COMMUNITY AND MEDICAL ECONOMICS.*

R. W. GARNETT, M. D.,
Health Officer
Danville, Va.

The people of the United States are spending for all forms of medical care about three billion dollars annually, or an average of $30.00 per person per year, according to the report on "The Cost of Medical Care."

There are approximately 150,000 practitioners holding the degree of Doctor of Medicine—one doctor to about 800 of the population. There are about 63,000 dentists—one to about 1,700 of the population. There are over 200,000 trained nurses —one to about 600 of the population. There are nearly 900,000 hospital beds—one to about 130 of the population. It would seem that for this expenditure and with this number of trained persons prepared to give medical service and with this number of hospital beds that the people of the United States should be receiving adequate medical care. That such is not the case is very apparent to any student of conditions as they exist.

Scientific knowledge is at our command which, if fully used, would prevent much of the disease which is now partly or wholly incapacitating millions of our people and causing incalculable economic losses. Recent studies have thrown a flood of light on this subject and have shown that many pre-conceived ideas are entirely wrong.

A recent study of 9,000 average families in 130 communities in eighteen states showed that only 43 per cent of the needed medical service, only 25 per cent of the hospital care and only 24 per cent of the needed dental care was being received. It has frequently been assumed that people can secure needed medical and surgical attention either as pay or charity patients. Of course, those who have wealth can pay for any service they desire, but it is certainly erroneous to assume that the poor, even with our greatly increased number of clinics and hospitals, are receiving all the medical care and supervision needed. The adage, then, "only the rich and the poor receive the best medical care" expresses only a part truth, for the poor do not receive adequate care and, as is implied in the above quoted adage, the great middle economic group is often unable to pay the costs and is not willing to ask for charity. This middle group therefore suffers perhaps most of all.

With the foregoing premises, therefore, one must reason to the conclusion that there is something wrong.

The first question, then, which might be considered is, "Are doctors, dentists and nurses rendering all the professional service of which they are capable and which they desire to render, and are our hospital and clinic facilities being utilized to the fullest extent?"

Under present day standards the cost of securing preparation for the practice of medicine both from the standpoints of general and technical training and of equipment is enormous, and is on the increase. The cost of construction, equipment and maintenance of hospitals is very high. Yet on the average only about 75 per cent of these hospital beds are in daily use, and highly trained doctors and dentists are forced to spend many hours of time awaiting in high rent, expensively equipped offices for patients, many of whom never come.

That the income of the average physician is too low is a well recognized fact, although outstanding specialists receive high incomes, for, where one doctor has an income of $10,000 per year, two have an income of less than $2,500 per year. "This something wrong" is not the fault of the individual doctor, nor, perhaps, is it the fault of the individual patient.

Reflection, then, will show, I think, that, as a matter of fact, doctors, dentists and nurses are not rendering all the professional service of which they are capable. In addition to the economic barrier, there is also the fact that carelessness and ignorance on the part of a large element of the population in a measure accounts for this failure to fully utilize the facilities which are at hand for securing needed care.

*Read before the South Piedmont Medical Society at Lynchburg, Va., November 27, 1934.

The second question for discussion, then, is: "Are the people of the United States receiving the service which they should receive?" The reply to this question is also in the negative, for we can see all around us people in need of medical, surgical and dental attention sufficient to keep all the doctors and dentists busy.

Dr. Roger Lee, of Boston, working with the Committee on the Cost of Medical Care, estimated that, in order to provide all the medical care needed for all the people in the United States, 7 per cent more doctors, 75 per cent more dentists, 10 per cent more nurses and 59 per cent more hospital beds would be needed. He estimates that, with proper organization, with elimination of unnecessary waste motion and over-head, complete medical service can be supplied to the American people for $36.00 per capita per year, whereas $30.00 per year per capita is now being spent for very inadequate care.

The third question is: "What can be done about it?" If one might presume to undertake to answer such a weighty question, I would say that four points should be clearly defined:

First.—Greater emphasis should be placed on "Preventive Medicine" by medical schools, physicians and people. Although marvelous advances have been made within the past half century and the sick and death rate from many diseases greatly reduced, we still have a long way to go, for much preventable disease is not actually being prevented. Thousands of children are still growing up physically handicapped from preventable or remediable conditions, such as adenoids, diseased tonsils, bad teeth and undernutrition. Millions of our workers are at a low standard of physical fitness. Tuberculosis is still reaping too high a toll.

Eugenic birth control is only at its beginning and defective or criminal strains are propagating their kind at an alarming rate.

The *Second* thing that may be done about it is: "Periodic Health Examinations."

Through the combined efforts of doctors, insurance companies, civic leaders and public health agencies this phase of medical practice should be developed.

The doctor should be looked upon as more than a refuge when acute illness comes. He should be thought of as Health Advisor. People, while well, should come to their own physicians for examination and advice as to how to *keep well* and should feel that they are paying for valuable service.

Physicians interesting themselves in the "The Health Examination" and showing their patients its worth-whileness can build up a phase of work which will bring a deep sense of satisfaction and also commensurate financial rewards. In my opinion, many of our general practitioners are neglecting to develop this field of work to their own and their patients' loss.

A *Third* thing that can help to bridge the gap is: "Group Practice."

From the experience of groups practicing in various centers as well as from the viewpoint of good economics, it appears that this system should be extended in order that, through cooperative effort and reduction of over-head, the people of a community may be served more effectively and at a cost more nearly within their ability to pay.

Already in some cities physicians are being encouraged to organize themselves as groups around the hospital, making common use of waiting rooms, secretarial and nursing service, technical aides and X-ray and laboratory service in the hospital itself with a proportionate saving in over-head.

Group practice should be developed to a greater extent as one means of bridging the gap between physicians needing patients and an increased income on the one hand, and patients needing scientific medical service at a cost within their economic range on the other.

The *Fourth* is: "Hospitalization by the Group Payment Plan." Plans embodying this general principal have been worked out in over forty American cities whereby the cost of hospitalization is being spread over the whole group.

"Hospitalization by the Group Payment Plan" is manifestly of definite advantage to Mr. Average Man who, for a small amount spread over a year and paid in direct or through his employer's office, meets the hospital bill for himself and his dependents before it is due—a case of being one jump ahead of misfortune.

It has proven to be a blessing to hard pressed doctors, for, under this plan, they stand a much improved chance of collecting their fees, since the hospital bill of the patient will already have been taken care of.

It has also proven to be of great benefit to participating hospitals, enabling them to solve their

XUM

financing problems satisfactorily, and, therefore, to serve the community in a more complete way.

This plan has been endorsed in principal by the American Hospital Association and by the American College of Surgeons. Dr. Chas. A. Dukes, of Oakland, Calif., Vice-President of the American College of Surgeons, in presenting the plan in operation in Alameda County with its population of 500,000, said, "It seems to me that a plan that makes it possible for an employed person to (1) get hospitalization at a small cost spread over a year, (2) in a hospital of his own choice, (3) with the attendance of a physician of his choice, (4) allowing the physician to set his own fee and collect it in his own way, should elicit the support of every man and woman who desires to see people of moderate means pay for their own hospitalization rather than become an object of charity either in a tax supported or voluntary hospital. To my mind, group hospitalization solves the problem for patients, doctors and hospitals and, instead of making an opening wedge for State or compulsory medical care, as some fear, really acts as a preventive."

In conclusion, increased emphasis on and support of (1) "Preventive Medicine," private and public; (2) development of the "Periodic Health Examination" by private physicians; (3) "Group Practice," and (4) "Hospitalization by the Group Payment Plan" cover in principal the answer to the questions (1) "What can be done to provide more complete medical care for all the American people?" and (2) "What can be done to provide a better opportunity to our highly trained American physicians to render the full service of which they are capable?"

In my opinion these are the four lines of development which, if conscientiously and persistently followed, will prove to be of untold benefit to the people and the physicians of our respective American communities, and will lead away from, and not to, the "State Medicine" so much dreaded by some members of the profession.

With millions of our people unemployed and additional millions living below the economic borderline, the need of some readjustments is apparent.

An important question for the medical profession, therefore, is: "Are we going to face the facts and be leaders in the movement, or are we going to be dragged into it by a public sentiment speaking through its governmental agencies?"

MEDICO-LEGAL ASPECTS OF APOPLEXY.*

J. MORRISON HUTCHESON, M. D.,
Richmond, Va.

There has existed for many years a widespread belief, common alike to physicians and laymen, that apoplexy is often the result of acute physical or mental strain. Textbooks have furnished and continue to furnish a considerable measure of support to this idea. With the advent and growth of casualty insurance in its several forms, the significance of fortuitous agents in disease has vastly increased; and since apoplexy is one of the commonest of diseases, such accidental factors as may enter into its causation must necessarily require frequent consideration and critical evaluation.

As defined by Dana, "Apoplexy is a clinical term used to indicate a condition characterized by sudden paralysis, usually attended by loss of consciousness, and due either to the breaking or blocking up of a blood vessel in the brain." Though the present discussion purports to deal with the etiology of apoplexy, it is assumed that a clinical distinction between cerebral hemorrhage and thrombosis is usually impossible and that post-mortem studies often fail to reveal the exact nature of the cerebral lesion. In most instances the physician reaches the limit of his knowledge when he concludes from a consideration of the symptoms and physical findings that the patient has suffered a "stroke." Such a diagnosis is not as a rule difficult, but when called upon to establish a causative relationship between the stroke and some supposed physical or mental strain preceding or attending it, the doctor's task is by no means easy.

*Read before the sixty-fifth annual session of the Medical Society of Virginia, at Alexandria, October 9-11, 1934.

The question may present itself in several forms. A male teacher of fifty-three, previously known to have hypertension, suddenly falls, while walking down steps in his home, arises after a few minutes with no apparent injury, but within a few hours develops paralysis, coma and death. He has carried a considerable amount of accident insurance, which is now claimed by his heirs on the ground that the fall caused death. A carpenter of sixty, previously in good health, falls from a low scaffold, is picked up unconscious and develops complete hemiplegia. He demands compensation on the ground of accidental injury in line of duty. What is the physician to say when consulted as to the soundness of these and similar claims or when summoned to testify in court concerning them? If he refers to his textbooks, even the most modern, he reads that, while most apoplexies occur in elderly people with hypertension, the exciting cause is a rapid rise of blood pressure occasioned by severe mental or muscular exertion. If he should canvass his own experience, he will recall that states of stress were conspicuosuly absent in connection with the cerebral accidents he has seen. He realizes, also, that the stroke is often preceded by premonitory cerebral symptoms such as dizziness, which may cause a fall. Thus he may be unable to reach an opinion or left to choose his side of the argument according to his sympathies.

Following the discovery by Wepfer in 1658 of the hemorrhagic nature of apoplexy, succeeding writers recognized vascular disease as the important cause and centered their discussions chiefly upon its nature. In the early 19th century the conception of cerebral hemorrhage as arising from the giving way of the diseased vessel wall, when subjected to increased intravascular pressure from excessive bodily stress, appeared in textbooks, along with other exciting causes, and has been retained to the present time. It apparently originated in the reports of occasional cases in which an apoplectic stroke occurred during exertion and grew in popularity with the widening interest in the study of blood pressure. Additional support appeared in the supposed discovery that the cerebral arteries are without vaso-motor control and, consequently, their pressure must passively follow changes in the general circulation. I propose to analyze this conception in the light of present-day thought, with the hope of clarifying its implications and emphasizing its limitations.

The theory of bodily stress as an exciting cause of apoplexy involves the following assumptions: (1) that rupture of a large vessel does occur, (2) that exertion does raise tension in the cerebral arteries, and (3) that rupture results from relatively slight elevation of pressure such as has been seen in the peripheral arteries following exercise.

Conflicting statements have appeared from pathologists as to the relative frequency of hemorrhage in patients dying of clinical apoplexy for the reasons stated hereafter, but in some series of cases studied thrombosis with softening has been reported by reliable observers as occurring more often than bleeding and in ratios as high as 4 to 1. The nature of the cerebral bleeding found has long been a matter of controversy. The earlier authorities regarded the bursting of a vessel as the primary event with mechanical damage to surrounding brain tissue. Bouman[1] has summarized the various views advanced by writers of the past century. Charcot (1858) regarded miliary aneurysms as the important basis of rupture. Pick (1910) found that these aneurysms do not develop until just before the hemorrhage occurs and then only on the side of the bleeding. Rosenblath (1918), impressed by the appearance of the brain substance in the vicinity of a hemorrhage, advanced the idea of a parenchymatous oozing from all vessels, chiefly capillaries and veins, in the region of the lesion, brought about by metabolic disturbances. Westphal and Baer (1926) upheld the view of primary softening or "angionecrosis" and attributed it to local anemia, brought about by arterial spasm. This view was later amplified by Cobb,[2] as follows: "When there is lack of oxygen in any tissue, chemical changes immediately take place. In the brain the result is edema, dilatation of blood vessels, diapedesis of red cells and necrosis; all this occurs quickly at the center of the anoxemic area." Ruhl (1927) thought hemorrhage to be always preceded by local atheromatous ulceration. Bouman believes that large hemorrhages from large vessels do occur and cites the work of Staemmler (1927) who showed that the appearance of the brain substance around a gunshot wound is identical with that around an apoplexy. Thus it is seen that no agreement has been reached from pathologic studies for the reason

that it has been impossible to reconstruct the successive stages of the whole process on the basis of the anatomic picture presented after completion. Yet it seems established that the presence of cerebral bleeding does not predicate vascular rupture.

In a masterful review of the historical development of the subject, Lange[3] concludes that now and then hemorrhage occurs from the rupture of a supermiliary aneurysm or of vascular branches that have undergone sclerotic changes, but in the great majority of cases the massive hemorrhage is the result of bleedings from the smallest vessels. "This opinion" he writes "necessarily rests largely on clinical and experimental observations as it is impossible to arrive at any definite conclusion from the purely anatomic point of view. As regards the clinical aspect of such apoplexies, they are often preceded by premonitory symptoms in the form of paralytic affections and also by vasomotor disturbances. Evidently these phenomena are functional disturbances affecting the flow of blood through those parts of the brain in which the hemorrhage is going to occur."

While it is generally believed that bodily exertion raises intracranial pressure it has not been shown that pressure within cerebral vessels is correspondingly increased. On the contrary, Cobb and Blain[4] state that "changes in the pressure of the cerebrospinal fluid in general parallel sudden changes in the diameter of the arteries, the pressure rising with dilatation and falling with constriction." Moreover, it seems definitely established that the cerebral vaso-motor control is much the same as in the circulation elsewhere and that the older idea of passive response to changes in the general circulation is without foundation.

It is known that states of stress usually produce some elevation of arterial pressure as measured by the ordinary methods, but such increase is relatively slight. Whether or not it is sufficient to produce rupture would depend, of course, upon the degree of weakening, already present as a result of localized vascular disease, and this factor is impossible of determination. Lambert and Muller,[5] working with the perfused brains of cadavers, found that the pressure required to cause rupture was four times as high as the highest carotid pressure in the living. They also found that rupture could be produced only in vessels affected by syphilis or arteriosclerosis and that this occurred in the basal ganglia.

If the theory of bodily strain as an exciting cause of hemorrhage were accepted as valid it would still be necessary, in order to establish its importance, to show that apoplexy follows stress in a proportion of cases larger than could be accounted for by coincidence. A number of studies bearing on this question have been recorded. Gintrac,[6] in 840 patients with apoplexy, found a history of unusual effort in ten. These included defecation two cases, and coitus one case. An analysis by Ernest Jones[7] of 123 cases of cerebral hemorrhage, proven at autopsy, indicated that in none did the attack come on through excessive effort. Jones found thrombosis occurring more frequently during sleep than hemorrhage, but thought the incidence of hemorrhage relatively low because many such patients die before morning and therefore are not brought to the hospital. Of 188 patients studied by Webster,[8] 126 of whom were classified at autopsy as cerebral hemorrhage and sixty-two as thrombosis with softening, only two gave histories suggesting any relationship to physical or mental strain. Perkins,[9] from a study of 801 cases of apoplexy admitted to the Kings County Hospital, concluded that "it is exceptional for any of the cerebral vascular accidents, even hemorrhage, to occur during great exertion."

Dr. Ennion Williams, at my request, has analyzed the records of 100 patients with apoplexy, admitted to the Hospital Division of the Medical College of Virginia, with particular reference to the circumstances attending the onset. In twenty-five the attack occurred during sleep and in twenty-four during ordinary work. Four began while eating, two while at stool and three patients were ill in bed. In the remainder, the attack began while loafing, either sitting, standing or walking. In none was there a definite history of extreme mental or physical exertion, but in several this factor may have been suggested. One patient stated that he had eaten a big supper, walked about a quarter of a block and fell. One had been running and had lain down in a hammock. Another confessed to being slightly intoxicated, while one other stated that just prior to the attack she had been frightened by a drunken son.

It will be seen that the distribution of attacks in this group corresponds fairly well with the time

allotted by the average person to the day's activities. Division of the twenty-four hours on the basis of these figures would allow six hours for sleeping, six hours for working, eating one hour, defecation one-half hour and loafing 10.5 hours. Such a distribution argues strongly for a coincidental relationship of apoplexy to stress and equally strongly against the notion that cerebral accidents are dependent upon an exciting factor in the way of physical behavior.

SUMMARY AND CONCLUSION

The growing prevalence of accident insurance has given increased importance to the evaluation of physical factors in the production of disease. Apoplexy has long been thought to be due to rupture of a cerebral artery as a result of physical or mental strain. Analysis of the evidence, both from the anatomical and clinical viewpoints, indicates: (1) that hemorrhage as a primary event occurs rarely if at all; and (2) that when apoplexy appears, as it occasionally does, during exertion, the relationship is that of coincidence rather than cause and effect. Cerebral hemorrhage is simply one manifestation of the vascular deterioration we call arteriosclerosis, and, though its exact mode of consummation is unknown, it is unlikely that states of stress constitute a factor of any importance in its production.

REFERENCES

1. Bouman, L.: *Arch. Neurology and Psychiat.*, 1931, 25, 255.
2. Cobb, S.: *Arch. Neurology and Psychiat.*, 1931, 25,273.
3. Lange, Fritz: Arteriosclerosis. The Macmillan Co., 1933.
4. Cobb, S., and Blain, D.: Arteriosclerosis. The Macmillan Co., 1933.
5. Lambert, H., and Muller, W.: *Frankfurt Ztschr. f. Path.*, 1926.
6. Gintrac, E.: Maladies de l'appareil nerveux, 1869.
7. Jones, A. Ernest: *Brain*, 1905.
8. Webster, S. J.: *Ohio State Med. Jour.*, Vol. 25, 1929.
9. Perkins, O. C.: *Annals Int. Med.*, May, 1933.

Professional Building.

DISCUSSION

DR. BEVERLEY R. TUCKER, Richmond: Dr. Hutcheson is always interesting and stimulating. This paper is rather revolutionary—dare I say it this close to Washington where it seems revolutionary ideas are the order of the day? In most respects I agree with Dr. Hutcheson. I feel with him that emotional shocks and exertion rarely cause apoplexy. I feel also that those with plethoric faces, who are stout and good livers, are hardly more susceptible than those who look like they never had a square meal or a good drink in their lives. I have known pious preachers and Victorian ladies to have apoplexy. Further, I also agree with him that elevated blood pressure *per se* is not the cause of apoplexy. For a hemorrhage to take place there must be a damaged wall as well as an elevated blood pressure.

If there is a necrotic spot in the vessel wall rupture of the vessel can take place with quite low blood pressure. Hassin, in his Pathology of the Nervous System, says, referring to hemiplegia from hemorrhage, "the blood vessels are always changed—sclerosed, necrosed, or covered with miliary aneurysms." If there exists an aneurysm of some standing it would seem exertion may cause its rupture, but this is open to question.

Cerebral blood vessels do have vaso-motor control. This helps to keep the cerebral fluid interchanged within certain limits. This cerebral fluid interchange is disordered when a hemorrhage occurs and the hemorrhage increases not only intracranial pressure from venous blockage but also may cause increased blood pressure within the cranium. Either cerebral hemorrhage or cerebral thrombus may cause cerebral edema. Cerebral edema where sudden, as in certain cases of injury to the head, may give symptoms resembling apoplexy.

But apoplexy is a loose term if it is to cover the result of cranial injury, brain edema, hemorrhage and thrombosis. At times these last three conditions are clinically difficult to distinguish, especially in the presence of an injury to the head. I once had a case in which a woman was struck over the zygoma with a heavy lamp. She died from what I thought was a cerebral hemorrhage, but at autopsy no hemorrhage was found but an extensive thrombosis involving the circle of Willis.

I think the term apoplexy, if used at all, should exclude both thrombosis and edema and all cortical, subcortical and intracranial hemorrhages except hemorrhage into the internal capsule on one side from rupture of the lenticular striate artery. This artery is a terminal branch of the anterior branch of the middle cerebral and is known as *the artery of cerebral hemorrhage*. Rupture of this vessel occurs in syphilis and arteriosclerosis, usually in patients past middle life with elevated blood pressure. This form of hemiplegia is, as a rule, determinable by a careful neurological study of the reflexes rather than by general considerations of unconsciousness, blood pressure height, or premonitory symptoms and experiences. The pupil is more widely dilated on the side of the lesion, the abdominal reflex is absent on the hemiplegic side, there is greater flaccidity of the extremities on the affected side and many other things which, when present, make quite a safe bet that there has been a hemorrhage into the internal capsule on the side opposite the hemiplegia.

I quite agree with Dr. Hutcheson that, as things are, much confusion arises in insurance and court cases. Vertigo or loss of consciousness, or so-called stroke, may cause a fall and unconsciousness, and many an insurance company or corporation has had to pay for damages it was in no way responsible for. I was once in a railroad case in which, during a rather severe jerking of the train one night, the head of a lady was bumped. She dressed and walked around, got to her destination and carried on her usual activities for thirty-six hours and then was taken with an apoplexy and died. It was found that she ran a blood pressure of around 250 systolic and had other evidence of arteriosclerosis. I testified that, in my opinion, the blow had nothing to do with the apoplexy and that if it had it would have caused an immediate stroke. However, the attorney for the railroad got "cold feet" and compromised the case.

I think we should all feel grateful to Dr. Hutcheson for bringing this subject so intelligently and so interestingly to our attention.

THE ADMINISTRATION AND MISADMINISTRATION OF DIGITALIS.*

WALTER P. ADAMS, M. D.,
Norfolk, Va.

The proper administration of digitalis is only one of the important measures used in the treatment of heart disease. Its correct combination with other therapeutic procedures is absolutely essential. Its value mainly comes from the benefits resulting from its use in heart failure. Consequently its administration is usually in the amounts necessary to cause full therapeutic effect. There are, however, reasons advanced for its use in smaller doses.

The accepted effect of digitalis on the circulation results from, first, slowing of the rate which allows greater diastolic filling, and, second, an increase in the tone of the heart muscle fibers and more prolonged ventricular contraction.

The first effect, that of slowing, is brought about by actions from two widely separated sources, namely, the stimulation action of the vagus center in the medulla, and the depressant action on the conduction system of the heart. It is this latter depressant influence of digitalis on intracardiac conduction that explains at least one-half of the virtue of the drug. The second effect, that of increase of muscle tone, increases the cardiac output. This increase of heart muscle tone and of completeness of contraction is through an action directly upon the myocardium not yet understood.

Related effects of digitalis on other portions of the body are interesting.

Its effect on edema[1] is not a true diuretic action. The diuresis produced by digitalis is entirely secondary to improvement in the general circulation. An increase in urinary output does not follow its administration to normal individuals, nor to cardiac patients without edema, nor to patients with edema due to nephritis.

For years, controversy has existed as to whether or not digitalis has a direct action on the blood vessels. Most evidence has been against such an action. Recently Dock and Tainter[2] have described constriction of the hepatic veins from digitalis action and point out that this may aid in bettering the cardiac output by relieving the over-burdened heart. This relief is accomplished by diminishing the venous return to the right auricle.

The gastric effects of digitalis have been studied thoroughly. Ever since Hatcher and Eggleston, in 1912, demonstrated that digitalis produces typical retching in eviscerated animals, evidence has been accumulating which indicates[3] that the emesis produced is a reflex effect, resulting from the action of the drug on the heart, the impulses passing from the heart to the vomiting center in the medulla. The observation and study of this reflex emetic effect of the drug revealed the presence of a cardio-enteral reflex. This is quite active in certain clinical conditions, such as coronary occlusion, angina pectoris, and cardiac dilatation, it being the cause of so-called indigestion in these conditions. At times, in cases of severe congestive failure, the vomiting arising from the irritable state of the stomach, consequent to splanchnic congestion, is liable to cause confusion in the mind of the clinician. Vomiting of this type disappears with im-

*Read before the Norfolk County Medical Society, December 17, 1934.

provement of circulatory efficiency and therefore the administration of digitalis should be instituted immediately by routes other than by mouth.

The colored vision observed after the administration of digitalis must be considered a manifestation of digitalis poisoning. It is explained by Weiss[3] as resulting from the spreading of stimulation effect on the vagus center in the medulla, to the visual centers of the mid- and hind-brain. An unique phenomenon, resulting from over-dosage, is that of colored hearing. This was described by Lowman, of Germany, in 1912. In this manifestation, colors appear through certain auditory stimuli. The sounds of various vowels or of certain musical notes produce a visualization of certain colors. These colors persist with closed eyes. This results from stimulus of the acoustic nerve, producing a disturbance of the visual centers involved in colored vision.

Digitalis is probably not responsible for the mental disturbance seen occasionally in the course of its administration. This psychosis usually occurs in old people or in the presence of severe or long-standing congestive failure. Weiss[3] has observed that its character is that of a toxic psychosis, and is identical with that seen in cardiac patients who have never received digitalis, and that the onset of the psychosis is not necessarily associated with well-recognized signs of digitalis intoxication. These and other recorded observations allow the conclusion that in this psychosis we are dealing with a cerebral circulation, which was abnormal before the use of digitalis, due to chronic sclerotic vascular or circulatory changes. Then sudden general circulatory changes are produced through digitalis and a psychosis develops because of the sudden change in the cerebral circulation, and possibly because of the lessening of cerebral edema. At any rate, considering the universal use of the drug and carelessness in dosage, one would expect that if digitalis could cause psychoses, they would be much more frequent.

We now come to the actual administration of the drug. Standardization today is dependable. Cat standardization is requested by the American Heart Association and is used by most manufacturers. Much confusion resulted from the use of frog standardized preparations, when large doses of digitalis were first used. The proper dosage, according to the patient's weight, frequently brought about either toxic symptoms or a lack of effect. Frog standardization was even held responsible for some deaths. The next United States Pharmacopeia will undoubtedly call for cat standardization. Stockton[4] writes that pigeon standardization is reliable and offers accuracy, ease and economy. Macht[5] has noted a difference in the strengths of the drug assayed under various weather conditions. Barometric changes affect the respirations and circulations of the cats being used, which affected the measurement of toxicity.

The form of digitalis used is immaterial. There is practically no advantage of one preparation of the drug over another. The solid preparations make for more accuracy of dosage in the hands of the average patient. It is wise to become familiar with one product, even to the exclusion of all others. This allows a better anticipation of its effect.

When the full influence of the drug is desired, either slowly or quickly, the Eggleston method of dosage, according to the weight of the patient, is widely used. There are, however, individual variations not dependent on weight. Levine[6] states that an average adult, who has not had digitalis, will need about thirty grains in the course of several days, if given by mouth, to become digitalized. Some will need less and some will need more. If no emergency exists, a one and one-half grain pill, or its equivalent, can be given four times a day for four to six days and then followed by a maintenance dose of one and one-half grains every day. In some individuals the maintenance dose has been found to be as great as four and one-half grains daily, but this is unusual.

Absorption from oral administration is constant and complete in two to six hours. Gold and De Graff[7] have recently shown that in some instances excretion varies with the amount present in the body. This means that cumulation shows a tendency to be a self-limited process in some cases.

McCulloch and Rupe[8] found the tolerance of children for digitalis to be somewhat different from that of adults. Infants and those up to forty pounds have been found to respond more readily than adults. Those children over forty pounds, of about four years and over, require 50 per cent more digitalis per unit of body weight than adults.

Oral administration is usually possible. If not, the initial dose may easily be administered by rectum. By this route, dosage is the same and absorption just as rapid as when given by mouth. I have found rectal administration very useful. Levy[9] ob-

XUM

tained an initial effect per rectum in an average of two and one-half hours in a series of cases. Nausea and vomiting frequently clear up after absorption of the first dose, and oral administration can be started. Intramuscular administration is usually inadequate and is very painful to the patient. It frequently causes necrosis. The intravenous use of digitalis should be reserved for quick administration in emergencies, or for special conditions where the other routes mentioned are not practicable. In using the intravenous route poisoning can easily occur if previous amounts given are not known.

Of the digitalis family, other than digitalis itself, strophanthus is the only member worth mentioning, regarding its action on the heart. Its effects on the circulation are, in most respects, identical with that of digitalis.[10] Three main differences—first, more rapid action; second, more rapid elimination; and, third, its greater impairment by the digestive juices —make strophantus useful only in certain cases. It is valuable in hypersensitiveness to digitalis. It is best used only by intravenous or intramuscular routes when digitalis effect is needed in acute heart failure.* It is contraindicated in recent digitalis treatment because of the slow elimination of digitalis.

Before using digitalis, every case should be studied carefully as to etiology, and the anatomical and physiological changes should be fully determined, along with their correction and proper treatment. Its use in various circulatory conditions is best outlined by division into two parts: first, the treatment of the cardiac arrhythmias; and, second, the treatment of heart failure with normal heart mechanism.

In auricular fibrillation, with or without congestive heart failure, it is frequently of striking benefit. Here a knowledge of the etiological factor is of great importance. It is of great value in the arrhythmic complications of the rheumatic fever group. On the other hand, the senile or arteriosclerotic group of fibrillators respond poorly to digitalis, and those due to hyperthyroidism need Lugol's solution and surgery rather than diagitalis, it having little or no effect on the fast ventricular rate caused by thyrotoxicosis. Quinidine has replaced digitalis with excellent results in auricular fibrillation with reasonably sound hearts, as well as in some other arrhythmias. In other selected cases, a combination of the two drugs is advocated by some. But in the presence of any complication, such as increased ventricular rate, or failure, digitalis remains the perfect aid.

It is also indicated in auricular flutter where it transforms the condition to fibrillation,[11] but in paroxysmal tachycardia Christian, Levine and Fraser all agree[12] that it is practically powerless to slow the rate. It can sometimes be used here to advantage as a prophylactic measure against complications.

In a partial heart block, it can be easily misused because of the danger of causing complete auriculoventricular dissociation. But in partial heart block, with frequent and disturbing attacks of complete block, digitalization will complete the block permanently, and the patient will become more comfortable.[13] Recently Schwartz,[14] even in complete heart block, has advised full digitalization, stating that the improvement in efficiency of systolic contraction results in real benefit to the patient. This may not become necessary in all cases of complete heart block, and is distinctly contraindicated in the presence of the Adams-Stokes syndrome.

Digitalis is contraindicated in such rhythm disturbances as sino-auricular block, ventricular escape and nodal rhythm. This is because vagus stimulation would cause more pronounced slowing and further circulatory impairment.

Pulsus alternans and gallop rhythm, often present with marked ventricular dilatation, are both indicative of a failing heart and digitalis is urgently needed.

The question arises whether the presence of premature contractions is a contra-indication to beginning the use of digitalis, since it is well known that large doses of digitalis cause their occurrence. In congestive failure the presence of premature contractions may be safely disregarded and digitalis used. However, a single premature contraction, occurring during digitalization, not previously being present, or the occurrence of bigeminal rhythm, call for immediate discontinuance of the drug.[15]

In those patients with normal rhythm having congestive heart failure, the use of digitalis gives impressive results and its full effect should be used. Generally speaking, *the* indication for digitalis administration is cardiac decompensation, the only exception being auricular fibrillation, which must be considered as a decompensation of the auricles.

There are, however, patients with normal rhythm having circulatory disturbances but without decom-

pensation, who may or may not be benefited by digitalis. Its use is controversial when there is normal rhythm, in such conditions as hypertension and hypotension, coronary disease, coronary thrombosis, old age, various infections, and in conditions relating to surgery. But let it be fully understood that if congestive failure or arrhythmic complications arise in any of these conditions, full digitalis effect is immediately essential. The only absolute contra-indications of digitalis are the presence of the Adams-Stokes syndrome in heart block and hypersensitiveness.[16]

In valvular defects, with decompensation, most impressive results are obtained by digitalis, but without decompensation there is no indication for its use.

In coronary thrombosis, Pardee[17] and Levine[18] have separately commented on the inadvisability of digitalis therapy. Levine attaches his unfavorable results to the further irritation of an already irritable ventricle.

Digitalis is not contra-indicated in angina pectoris, or in coronary disease, but the consensus of opinion is much against its use. It will not relieve angina nor any symptoms of pure coronary disease, but may be used without fear to relieve congestive failure or if fibrillation occurs. My own feeling is that in these uncomplicated conditions it will do no good and is capable of doing harm. Fenn and Gilbert[19] have shown that digitalis is capable of producing anginal pain by vaso-constriction action on the coronaries. This action of digitalis will not occur in every case, nor can its occurrence be predicted in any given case. Brooks,[19] in his book on angina pectoris, writes that he believes digitalis commonly increases the frequency and severity of this symptom-complex.

Regarding blood pressure changes, it is generally conceded, since the work of Sahli and others, that blood pressure is little altered by digitalis in therapeutic doses, and of no value in uncomplicated hypertension or hypotension.

For years it has been used as a so-called heart tonic by some. Christian[20] has made observations regarding digitalis increasing heart efficiency in elderly people without heart enlargements, but in whom circulatory efficiency is lessening. There is no actual failure but only anticipation. Accepted usage of digitalis in these cases is in full doses if it is needed at all. Christian's observations show that in the aging process, the heart muscle loses water. In all these cases he advocates digitalis in small doses over long periods, counteracting the dehydration of the myocardium and increasing its efficiency. In my own hands, over a period of some years, these tonic doses have shown beneficial effects.

Christian[20] also goes further than the present accepted indications of digitalis in believing that it helps to inhibit cardiac hypertrophy. He believes its use reasonable in anticipating future cardiac enlargement with its further serious end-result of decompensation. The greatest number of patients, falling into this class, are those with hypertension; next, are those with a diastolic murmur of some sort; and then are those with a systolic murmur and a rheumatic history. In all these and in any hypertrophy he advises less exertion, and uses less than usual doses of digitalis for the remainder of the patient's life. By doing this, he believes cardiac enlargement is retarded, and greater physical activity is possible for these patients.

Much has been observed and written regarding the use of digitalis in infections. We know that the drug has very little effect upon the rapid heart rate of fever; in fact, its effect seems to be neutralized by an elevated temperature. In general, then, its use is not indicated in infections or in the majority of the infectious diseases.

Recently Ganter,[21] in Germany, in investigating circulatory collapse in infections, observed that toxins acted to cause dilatation of the larger arteries, and that, while compensatory mechanisms of the body can maintain normal pressure for a long time, finally the return flow to the heart is seriously impaired. He concludes that in circulatory collapse in infections quick vasoconstrictor effect is desired, and not the slower central or heart effect of digitalis.

In rheumatic fever or rheumatic heart disease, only heart failure or arrhythmic complications are indications for digitalis, and before they occur there is no reason for its use. For years it has been used with caution in diphtheria. Recent work by Stecher[22] strictly contra-indicates its use on account of the various degrees of heart block caused by the diphtheria toxin.

In pneumonia its use is very controversial. Stone,[23] of the Medical Corps, U. S. A., made a report, based on 871 cases handled in 1918, all of

XUM

whom were fully digitalized, and concluded that its use is of distinct value. There were no over-effects of digitalis, such as heart block, and he felt that the general circulatory effects were beneficial in sustaining the heart in its time of severe stress. These patients were of both the broncho and the lobar type.

White,[24] in 1927, reported regarding 221 unselected cases of the lobar type, finding a definitely higher mortality among those not receiving digitalis, or receiving it after congestive failure signs had begun.

Conversely, Randolph,[25] in 1929, expressed himself against the use of digitalis in pneumonia. He states that it should not be used until actual failure of the heart muscle occurs, that the danger of collapse of the peripheral circulation is of greater importance, and the failure of digitalis to control the rate of the heart in fever speaks for itself.

And Wyckoff,[26] in 1930, reported a well controlled and thorough study of 835 cases of lobar pneumonia, concluding that the results did not justify continuing the routine administration of digitalis in lobar pneumonia.

Porter and Newburgh suggest the use of digitalis as routine, and impress early and quick administration so the patient is soon partially digitalized. Just before or when effects appear, the drug is discontinued as long as the patient's condition indicates its use is not necessary. From my own experience, this partial or near-digitalization seems to be the best procedure.

White,[27] in his textbook on heart disease, concludes, regarding digitalis in pneumonia, that since the right ventricle is under unusual strain, and since apparent benefit has been derived from routine digitalization in pneumonia, its use is of distinct value, but that the question of its use will remain undecided by many until more complete data is at hand.

At times digitalis is necessary in surgery. The majority of operative patients have normally functioning hearts. It has been shown that digitalis shows no strengthening effect on the normal heart. In fact, Marvin and Pastor[28] show that digitalis will decrease the efficiency of a normally functioning heart, particularly where arteriosclerotic changes are present. In routine pre-operative care, therefore, the use of digitalis should not be encouraged. Its use should concern only cardiac conditions indicating it.

Post-operatively, it is certainly not indicated unless congestive failure exists or is anticipated, for the reason that its effect cannot be expected in any immediate collapse. Congestive heart failure must be distinguished from peripheral circulatory failure. Digitalis is as useful in the one as it is useless in the other. The classic findings in decompensation of dyspnea and cyanosis, with increased venous pressure, are quite opposite from the findings in peripheral circulatory collapse. In this latter, the splotchy skin cyanosis, lack of dyspnea, etc., result from a low venous pressure, decreased blood volume, insufficient venous return, and low blood chlorides. It follows that digitalis is of no avail in correcting these changes, while other recognized procedures will.

In closing, let me say that much digitalis has been wasted in the past, that many patients have been harmed by it, and many patients made miserable by its toxic effects with no resulting benefit. On the other hand, however, digitalis is one of the most valuable of drugs, and its intelligent use, in combination with rest and other measures, is a real triumph in the practice of medicine.

REFERENCES

1. Sollman, T.: A Manual of Pharmacology and Its Application to Therapeutics and Toxicology. W. B. Saunders & Co., 1926.
2. Dock, W., and Tainter, M. L.: *J. Clin. Investigation,* 8:467 April, 1930.
3. Weiss, S.: Med. Clin. of N. A. 15:4, January, 1932, p. 963.
4. Stockton, A. B.: *Am. Heart J.,* 9:2, p. 248.
5. Macht, D.: Communication before Amer. Physiology Soc., 1931.
6. Levine, S. A.: Leaflet Amer. Heart Assn., 1932.
7. Gold, H., and DeGraff, A. C.: *J. A. M. A.,* 92: 1421, April, 1929.
8. McCulloch, H., and Rupe, W. A.: *American J. Med. Sc.,* 162:231, August, 1921.
9. Levy, R. L.: *Arch. Int. Med.,* 33:742, June, 1924.
10. Sajons, L. T.: Cyclopedia of Med., 1933, Vol. 11, p. 787.
11. Lewis, T.: *Heart,* 4:171, November, 1912.
12. Bromer, A. W.: Cyclopedia of Med., 1933, Vol. 3, p. 452.
13. Herrman, G.: Cyclopedia of Med., 1933, Vol. 3, p. 296.
14. Schwartz, S. P.: *Am. Heart J.,* 4:408, April, 1929.
15. Gold, H., and Otto, H. L.: *Am. Heart J.,* 1:471, April, 1926.

16. White, P. D.: Heart Disease. The Macmillan Co., 1931, p. 579.
17. Pardee, H. E. B.: *J. A. M. A.*, 94:1555, March 17, 1930.
18. Levine, S. A.: *Medicine*, 8:296, September, 1929.
19. Fenn, G. K., and Gilbert, N. C.: *J. A. M. A.*, 98:99, January, 1932.
20. Christian, H. A.: *J. A. M. A.* 100:789, March, 1933.
21. Ganter, G.: Abstract, Tice, 1933, p. 93.
22. Stecher, R. M.: *Am. Heart J.*, 4:545, June, 1929.
23. Stone, W. J.: *Arch. Int. Med.*, 22:409, October, 1918.
24. White, P. D.: *Am. J. Med. Sc.*, 174:260, August, 1927.
25. Randolph, B. M.: *Arch. Int. Med.*, 43:249, February, 1929.
26. Wyckoff, J.: *J. A. M. A.*, 95:1243, October 25, 1930.
27. White, P. D.: Heart Disease. The Macmillan Co., 1931, p. 375.
28. Marvin, H. M., and Pastor, R. B.: *Arch. Int. Med.*, 35:782, June, 1925.

712 Botetourt Street.

SPLICING CAST TO CORRECT ANGULATION AND LENGTHEN LEG.*

M. A. JOHNSON, JR., M. D., F. A. C. S.,
Roanoke, Va.

In treating fractures, sometimes the simplest measure is of value in securing good alignment of bones. There is a treatment of fractures of the leg, to which I wish to call your atteention, that is sometimes valuable, especially in treating oblique fractures of the leg.

When reduction of a fracture of the leg has been attempted, a roentgenogram will often show bowing at the site of fracture. When this occurs if the cast

Fig. 1.—D. S. (a). Fracture of leg after attempted reduction and application of cast.

is cut transversely, completely around the limb near the point of fracture, angulation can be corrected, if the cast is firm. After the cast is cut the portion of the leg below the cut in the cast is moved away from the side where the concavity of angulation occurs. The cast on the other side holds firm. By making this motion a gap of one inch, more or less as desired, is made on the side of the concavity of angulation. The gap is then filled in with plaster, care being exercised to prevent filling in to too great depth and making pressure. The limb is held in this position until the cast hardens. This is done within twenty-four hours after the original cast is applied.

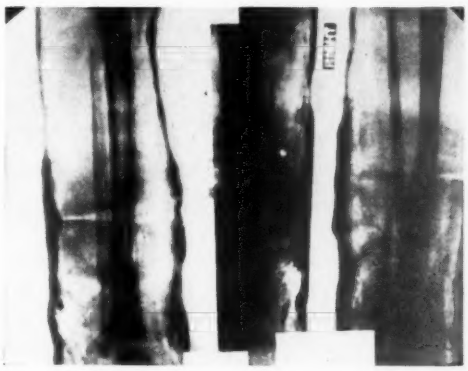


Fig. 2.—D. S. (b). After correction of angulation by splicing cast.

This method has been used at the Lewis-Gale Hospital a number of times with pleasing results.

As much as two inches overriding can be corrected by gapping cast on one side for one inch and filling in; then after the fill-in has hardened, the

*Read at a meeting of the Roanoke Academy of Medicine on November 6, 1934.

cast is cut in a new area near the first cut and gap made on the opposite side. This will give one inch lengthening, and two inches lengthening can be secured in the same manner.

Fig. 3.—R. M. (a). Fracture of leg after attempted reduction and application of cast.

No anesthesia is necessary. The patient experiences very little pain, the results are much more definite and more can be expected than if the entire cast is removed and a re-setting is attempted, since the same amount of overriding and slight angulation often occurs again, for an oblique fracture has a tendency not to remain in place, but to slip into the old line of deformity.

I have two cases to show you:

1. D. S. On September 9, 1934, an attempt was made to reduce a fracture of the tibia and fibula; a deformity with a backward bowing at the site of the fracture was noted on the X-ray film. The next day, without anesthesia, the cast was cut and filled in as shown on the X-ray film, with a so-called perfect position.

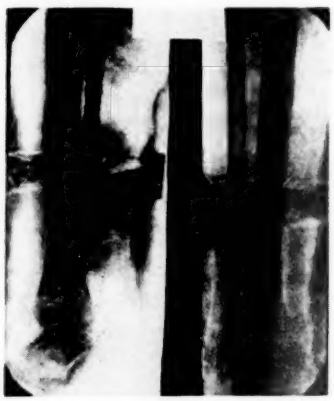


Fig. 4.—R. M. (b). After correction of angulation by splicing cast.

2. R. S. Had an oblique fracture. An effort was made to reduce it, and X-ray revealed a backward displacement at site of fracture. The next day the cast was cut and filled in, without anesthesia, and a good reduction was secured.

Conclusion: This method makes a second anesthesia unnecessary; produces very little pain, and is an economic measure from the standpoint that it obviates the necessity of applying a second cast, and sometimes makes open reduction unnecessary.

Lewis-Gale Hospital.

MYOCARDOSIS, A PROBLEM OF PREVENTIVE MEDICINE.*

LEE S. LIGGAN, M. D.,
Irvington, Va.

This study is directed to the general practitioner, the "Country Doctor" primarily. The writer makes no claim as to originality. He has recently had the privilege of reading "The Failing Heart of Middle Life," by Hyman and Parsonnet, published by F. A. Davis Co., 1933. After this reading, he has been impressed with the fact that many of his colleagues do not use their God-given powers, and are prone to give up in despair in this day of mechanics and laboratory. If this study enables the doctor, laboring in the far away places, far removed from medical centers and hospitals, to regain his confidence, the writer shall be amply repaid.

In some respects, it is unfortunate that diseases of the heart have become a highly specialized field of medicine. The general practitioner, the "family doctor," for lack of time, unable to make intricate studies with the aid of precision instruments, the electrocardiogram, etc., is beginning to feel out of

*Read before the Northern Neck Medical Society, May 24, 1934, at Warsaw, Va.

his depth, and is discouraged by the growing conviction that he is no longer competent to deal with cardiac cases. This is not as it should be. In the vast majority of instances the family doctor has first contact with such cases. With these remarks, I shall endeavor to show that the general practitioner, by intelligent and judicious study of his cases, by careful history taking, the employment of a stethoscope, watch and sphygmomanometer, is capable of arriving at a correct diagnosis of cardiac disease, and on that basis can outline the proper treatment in most instances. By this means, his confidence can be restored, and he will know when men specially schooled in this science should be called upon for advice.

The health and proper functioning of any organ is dependent upon an adequate amount of nutrition, supplied by circulating blood. The heart is a pump; the wall or myocardium must be supplied with incoming blood, so essential for muscle metabolism, and at the same time the removal of waste products must be fully as complete. In addition, and no less important, but too frequently not given the proper accord, is the state of activity of the myocardium.

You will not be burdened with an anatomical description of the heart or coronary circulation; suffice it to state that nature has provided the heart with physiologic devices to insure safety of operation under the most trying circumstances, and has supplied more than four times the necessary degree of circulatory exchange than actually required.

In recent years there has been a growing menace from cardiac disease in the prime of life, and it is important that the "family doctor" should know the signs and symptoms of those middle-age forms of heart disease, that do not manifest themselves by clear-cut physical signs. Frequently there is no murmur, and no abnormality of rhythm, despite the existence of severe myocardial degeneration, as shown on the autopsy table. To this form of chronic heart disease, due to degenerative changes normally present in every individual reaching the half-way mark of life, Reisman applied the term myocardosis. Heretofore, the term chronic myocarditis was used to designate the wearing out process, as well as the alterations effected by disease, much to the dissatisfaction subconsciously voiced by many authors of the past decade. Myocarditis is associated with a background of inflammatory phenomena, such as seen following an acute or sub-acute infections or toxic process. Myocardosis is the term applied to the heart which has become inefficient as a result of a disturbed coronary circulation and poor nutrition of the myocardium. Myocarditis is a disease of the early decades, myocardosis is seldom seen before the age of forty. Myocarditis is a disease resulting in inflammatory changes which have more or less incapacitated the patient over a period of years; myocardosis is a condition affecting those individuals who have previously enjoyed active and vigorous lives. Another dissimilarity is, whereas chronic myocarditis is apparently better withstood the earlier it occurs, the opposite is true of myocardosis. The senocardial syndrome experienced in the fourth decade may be fatal, but when it occurs in the sixth or seventh decades it may be relatively innocuous.

From a purely histopathologic standpoint, the development of myocardosis is one associated with, and apparently dependent upon, the gradual impoverishment of the parenchymatous element of the heart muscle. Whether this lack of nutrition is due to changes in the vascular system supplying the heart muscle or to changes in the composition of the blood itself, the end result is the same.

Maximow classifies the coronary artery as a combination of elastic and muscular type. As age advances there is a progressive development of the arterial wall in response to a normal increased demand for work. Hypertrophy and hyperplasia of tissues is the normal physiologic method for human organs to respond to this increase, and on the premise that when this process fails for one reason or another and degenerative changes supervene, then they are of pathologic import. Also, one may infer that while hypertrophy and hyperplasia are physiologic processes when these occur in response to a normal functioning of an organ, they become pathologic when it is the result of abnormal function. What might be considered a physiologic increase at fifty years of age would be definitely pathologic at ten, twenty or thirty.

In this physiologic process, while the wall of the vessel feels somewhat harder and is not as collapsible as in youth, the vessel nevertheless has not lost its elasticity. This is indicated by the undulating, wrinkled appearance of the elastic tissue elements, and the vessel does not show grossly the tortuosity seen in those cases where lengthening takes place

in response to lost elasticity. The lumen shows no narrowing.

The term coronary sclerosis is used here interchangeably with coronary arteriosclerosis and coronary atherosclerosis, and may be defined as a pathologic thickening of the wall of the coronary arteries due to an increase in fibrous tissue, particularly in the intima, which undergoes secondary degenerative changes. Included in the term are all those lesions leading to a thickening of the walls of the coronaries, whether they be due to a pathologic exaggeration of those factors responsible for the physiologic change, or to any other etiologic agent.

As might be anticipated the branches of the left coronary artery show a more marked involvement; and of these the anterior descending branch exhibits the most extensive, most frequent and at times the only involvement in the sclerotic process. This is due to the fact that the left ventricle, supplied by this artery, does the greater part in maintaining the peripheral circulation. Increases in peripheral resistance to flow of blood are immediately translated in hypertrophy of the left heart, with a resulting increase in blood flow through the coronary branches supplying this portion of the myocardium. The increase in blood flow causes a stretching of the coronaries, with a greater than normal strain on their elastic tissues, and, as postulated by Thoma for general arteriosclerosis, strain hypertrophy of the intima occurs with subsequent changes.

Another reason for the more extensive involvement of the left coronary is that in this artery the deep branches leave the main vessesls from the undersurface and at right angles, as pointed out by Whitten, and penetrate the muscle, holding the large branches, such as the anterior descending, in a rather fixed position. These points of fixation receive the stress and are the most frequent sites for sclerotic changes.

Predisposing factors in the production of coronary sclerosis are age, sex, heredity, and constitutional influences.

Coronary sclerous may occur at any age, although the vast majority of instances occur in middle adult life and old age. The highest incidence is seen in the seventh decade, followed by the sixth, eight, fifth and fourth.

Below the age of fifty years, the incidence in females is between 40 and 45 per cent, males between 55 and 60 per cent. After fifty years, however, the percentage of males increases, reaching 75 to 80 per cent.

O'Hare, in 300 patients with arteriosclerosis, found a family history of vascular disease in 68 per cent. Nortensen, in a study of 900 persons, concludes that heredity is a positive factor, but is attributal to hereditary, endocrine, or protein metabolism disturbances. Moschowitz believes that no hereditary factor is present, but that environmental influences are preponderantly responsible.

William Mayo stated that coronary disease is an increasing factor in the death rate among physicians, surgeons and other professional men. He explained this on the basis of high-tension work and sedentary life. Moschowitz finds that people who develop hypertension and arteriosclerosis conform to a constitutional type; physically they are soft-muscled, short-necked, non-athletic and over-weight. Emotionally, they are tense, irritable, high-strung and, more often than not, successful in their fields of endeavor.

In a general way, the experimental and clinincal data put forth as having a direct etiological significance in the production of coronary sclerosis may be classified as follows: (1) infections or toxins, (2) chemical, (3) mechanical, (4) metabolic and endocrine, (5) arteritis.

All of these factors are of importance; however, for sake of brevity and because of the scope of these remarks, only two will be discussed, namely (1) the mechanical, (2) metabolic and endocrine. Early myocardosis is more or less the result of aggravation of mechanical function and disturbed metabolism.

Mechanical: Klotz has shown that the blood pressure does not necessarily have to be permanently above normal. An acute rise for a short period of time frequently repeated would have about the same result. This is well illustrated in the type of individual who develops arteriosclerosis. With each additional emotional outburst the blood pressure temporarily rises, over-stretching the vessel. Adami's summation claims arteriosclerosis may ensue when, on the one hand, the artery has undergone weakening and the blood pressure is normal; and, on the other hand, the artery has no preliminary degeneration of the media, and the blood pressure alone is above normal.

Metabolic and Endocrine Factors: Chief among

the metabolic products to be blamed for the production of arteriosclerosis is cholesterol. Shapiro sees the problem as one which resolves itself into a determination of the factors influencing the metabolism of cholesterol, and which are responsible for its deposition. He studied the effect of the removal of those glands of internal secretion believed to control or influence fat metabolism and concluded that deficiency of thyroid, spleen, or gonads augments an excess of cholesterol and thereby accelerates the formation of atheroma. Adrenalectomy failed to produce this condition. Rickett believes that adrenalin acts in producing arteriosclerosis by increasing blood levels.

The characteristic lesion of coronary sclerosis is a nodular thickening of the intima, due to a deposition of fibrous tissue so as to reenforce the wall against over-stretching. The pathologic changes which ensue are those of regression, namely, tissue degeneration. As age advances there is a diminished blood supply to the media due to faulty function of the vasa vasorum of the adventitia. This occurs as a result of infection or other chemical and toxic factors acting through the blood stream. The intima receives its blood supply by diffusion. Eventually, an inability of the plasma to penetrate to the deepest portions of this fibrous connective tissue occurs and hyaline degeneration takes place, followed by necrosis and fatty infiltration. At this stage, they appear grossly as opaque yellow elevations in the intima which causes a narrowing of the lumen, hence retarding the flow of blood. This produces more strain on the particular point involved and increases the degenerative process so that the plaques may break down, become soft and friable, even ulcerate, leaving a rough surface upon which thrombosis may develop.

As the nodose protrusions into the lumen develop they cause varying degrees of obstruction to the flow of blood through that portion of the vessel, with resultant deficiency of nourishment to this particular area of myocardium. If the obstruction in the large branch is of gradual development so that an adequate blood supply to the heart muscle is maintained either through that vessel itself or through the establishment of a sufficient collateral anastomotic circulation, no gross or microscopic changes may be visible. However, when the obstruction is more acute, some of these fibers may undergo anemic necrosis and be replaced by fibrous tissue scars. The heart muscle in these cases gives the typical microscopic appearance of a diffuse myocardial fibrosis. Dependent upon the size of the artery involved is the amount of myocardial damage and its resultant impairment of function.

Presented by the startling fact that heart disease leads all other causes of death, notwithstanding the tremendous publicity given to cancer and tuberculosis, many persons have besieged their doctors to examine them and to allay their fears of sudden death from heart failure. With a knowledge of heart disease, founded for the most part upon the presence or absence of murmurs or irregularities of the pulse, the busy practitioner learned that this yardstick of knowledge was not sufficient. Having measured a patient by the older standards, and having found them normal, thereby assuring him that his heart and blood-vessel system were all right, it became disconcerting to explain to the family the man's sudden death on his way home. This sad experience has unfortunately been a rather frequent occurrence, yet a reconsideration of all the facts of the case made afterwards has not given the doctor any clue that would explain this accident. Apparently, therefore, the older methods utilized by the profession have not been sufficiently accurate or informative to permit an examination of a more satisfactory type.

It is a common occurrence to hear an individual approaching middle life take the opportunity of bringing into conversation the fact that he is "apparently not so good as he used to be." This is seldom heard in the doctor's office, but on the courthouse green, golf course, and the club. If at all encouraged, this individual will disclose further evidence of his inability to cope with the every day stress and strain of his particular occupation. With a nod or two of his head the doctor may pat him on the shoulder and dismiss the entire matter with a gesture to the effect that "the old boy is getting on and sometime when you get a chance, come around and see me." The latter may be recalled to the doctor upon learning of this individual's sudden death, with a newspaper diagnosis of "acute indigestion." While it is true that advancing age may be responsible for many such symptoms, when this condition occurs at the zenith of productive activity, it should become a matter of careful medical inquiry.

XUM

When a man of forty-five complains of infirmities which rightfully belong to the sixth decade, the attention of the physician should be centered at once upon the possible etiology of such a change.

Even the most minute deviation from the established cardiac mechanism due to an inadequate coronary circulation may be associated with a chain of symptoms, subjective as well as objective, so striking as to arrest immediate attention. The clinical picture presented by patients passing through such changes of circulatory balance has within recent times been recognized and fully established as a separate and distinct symptom complex.

It is indeed interesting to note that while this condition has existed from the most remote time, a true comprehension is a matter of comparatively recent development. This may be due in great part to the fact that the symptoms arising from such change were seldom associated with or attributed to cardiac origin; much more frequently organs far removed from the actual pathology were held responsible. Only one example need be cited here. For many years medical literature was replete with graphic descriptions of a clinical picture known as "acute indigestion." This diagnosis harbored the most tragic possibilities of sudden death. The close association between the eating of a more or less heavy meal and the sudden onset of epigastric pain of a peculiar type associated with nausea and sometimes vomiting rounded out the picture. Many such cases died immediately or soon afterwards, having passed through a period of agonizing pain. If he did not die promptly he was liable to have several such attacks, and he was known thereafter to be subject to "spells of acute indigestion." As late as 1909 "acute indigestion" was considered as a gastro-intestinal disturbance. It was not until 1910, when two Russian physicians, Obrastzow and Straschasko, reported an analysis of a series of such cases, that the true pathologic background of "acute indigestion" became known.

In like manner, sudden attacks of dyspnea after moderately severe effort were consigned to diseases of the respiratory tract.

Also, the surgical profession has been directed towards a perplexing abdominal condition which simulated, in many respects, acute surgical emergencies. From the purely surgical point of view, the presentation of sudden acute abdominal pain, rigidity, temperature, leucocytosis, and characteristic facies all serve to render this diagnosis a logical one. Many a physician faced with such a condition must lean to surgical intervention, but when such incidents arise in the middle and advanced periods of life the differential diagnosis is made more difficult, because the entire symptom complex may be due solely to coronary insufficiency.

So gradual may be the onset of symptoms depending on the beginning failing heart and blood-vessel system, that only the closest questioning and scrutiny of the individual will demonstrate its presence or absence. The question naturally arises as to the exact time or age of beginning middle life. No definite time can be determined as this period apparently has the most flexible limits. Suffice it to state that beginning middle life should be dated from a time when change of function manifests itself, from which a beginning wearing down of the machinery can be definitely inferred. Middle life is thus a physiologic rather than a chronologic period.

MASQUERADES OF THE FAILING HEART

Gastric: Where the individual has enjoyed good health and has no record of previously sustained damage to the cardio-vascular system, the clues leading to a diagnosis of oncoming myocardosis may be very scanty. At times symptoms may be referable to other portions of the body such as, for example, complaints relating to the gastro-intestinal tract. Epigastric distress, without frank pain, and a sense of fulness on arising from the dinner table may be the only subjective finding. When this has not previously occurred, and in the presence of a negative modern gastro-intestinal survey, it should not be dismissed lightly.

Insomnia may be the presenting symptom and here the family history is important. If this condition is common to the other older members of the family, then it may be dismissed. However, if this is something entirely foreign to family habits, insomnia is of significance.

Fatigability: Increasing fatigability is one of the most common and early manifestations of myocardosis. It may be produced equally by physical or mental effort. When pronounced, constitutional disease must be first eliminated. When a diagnosis eliminating anemia, primary or secondary, malignancy, diabetes, syphilis, or tubercular involvement has been made, myocardosis is likely the cause.

"Ergophobia": The sense of inability to perform

a certain task even before it is attempted is a peculiar characteristic. This psychologic attitude, manifested as an anticipatory fear of effort, represents an element of subconscious fear, rather than a disinclination to perform a certain task.

Pathologic "Tiredness": This is especially true of those of sedentary occupation; the familiar picture of the "brain fagged" individual being "too tired" to take even a simple exercise.

Personality Changes: This is of rather indefinite character, and the examiner must rely on the testimony of those closely associated with the individual under consideration. However, where an individual has formerly been of a careful and amiable disposition, and becomes morose and tyrannical, this finding may be considered as an additional symptom along with the other findings of myocardosis.

Anorexia: Another ill-defined symptom, but when it appears suddenly in an individual with a reputation of being a hearty eater, he should be studied for possible signs of early heart degeneration.

Mackenzie demonstrated that the symptoms of heart disease might be traced back many years before the accepted signs of the condition made their appearance. The inference is that sudden death from heart disease, which occurs in apparently healthy individuals during the middle-age period, would be preventable if the vague symptoms, which all of these individuals have, could be properly recognized.

MAJOR SUBJECTIVE SYMPTOMS OF HEART FAILURE

Three symptoms stand out as the earliest to develop, sometimes one, and sometimes another would be given as the chief complaint. Frequently these can be traced back for many years, depending upon the skill of the questioner in eliciting all the facts. This triad consists of dyspnea, palpitation, and substernal discomfort.

Dyspnea: The onset of dyspnea after effort is always a vague and difficult symptom to interpret. Just when this breathlessness, which comes on after various degrees of exertion, ceases to be a normal physiologic response and is a pathologic manifestation, may be a point of nice distinction. The problem is made more complicated by the unconscious resistance of the individual to acknowledge constitutional depreciation. Pride of physique is reluctantly abandoned by every man; to confess deterioration, to admit that he is a "has been," is made at great sacrifice to personal ego. Many, upon being questioned in regard to shortness of breath, will evade a true estimation of its occurrence, suggesting that it is a natural phenomena, and hence of no especial significance. When the question is asked about the reaction experienced after stair-climbing the answer often given is, "that one must expect to get out of breath after such effort." The difference between the two sexes is significant in their reactions to questioning. Women in general, tend to emphasize symptoms to the point of unconscious exaggeration, whereas men tend to underestimate them.

Evaluation of the dyspneic factor is of utmost importance. The examiner must discover if it is more difficult for the patient to climb the same flight of stairs now, than formerly. Due regard must be given to individual psychology; frequently the physician must take the patient into his confidence, and explain that admission of this lessened activity is no disgrace, while evasiveness and failure to admit such a handicap may lead to disastrous consequences. The late Dr. G. A. Friedmann used to warn his patients not to be heroes, that the time for heroism was never in a doctor's office while a diagnosis was being made. The important thing to determine is whether the expenditure of a certain amount of effort produces dyspnea now, when formerly the same effort produced no such result.

Palpitation, or heart consciousness, is the second symptom of early myocardosis. This is a subjective phenomenon, and the examiner is dependent upon the descriptive ability, the intellectual capacity, and the emotional reactions of the individual to express himself. Heart consciousness is usually described as varying from a mere awareness of the heart's activity, to painful pounding in the chest. Thumping, skipping, fluttering, knocking, shivering and numerous other designations are given to this sensation. The important fact is that, in the early stages of myocardosis, the sudden onset of palpitation after effort of the habitual, or customary, type should be regarded as specially significant, even though it may appear in individuals presenting no other cardio-vascular signs. The Witkin Foundation found that 81 per cent of the cases presenting this complaint had associated myocardial or vascular changes. Occurring in active and vigorous individuals of the middle-age group, it cannot be

XUM

lightly treated, as it forms either alone or in combination with the other two great symptoms, dyspnea and substernal distress, one of the unmistakable milestones in the onset and progress of the degenerative changes developing in the cardio-vascular system.

Substernal Distress: Of the three important symptoms of early myocardosis, probably the one fraught with the greatest danger is that of substernal distress. Apparently these sensations vary from a mere feeling of heaviness over the upper part of the chest, to that of a terrible vise-like constriction, experienced in certain forms of angina pectoris. The peculiar localization of the pain is of interest, in that patients invariably point to the mid-sternal area, rather than to the precordium. Here again, as in palpitation, the examiner depends upon the ability of the patient to express his complaint. At other times the localization of the pain is quite varied, namely, over both clavicles, both upper areas of the chest, the lower end of the sternum and the subscapular areas. As with dyspnea and palpitation, substernal distress is experienced after effort, which formerly did not produce this sensation.

Substernal distress is unquestionably the complaint that causes the patient to seek medical aid. Whereas dyspnea and palpitation may be considered by an individual to be his normal response to physical exertion, substernal pain immediately causes no little degree of alarm and apprehension.

Objective Manifestations in Early Myocardosis

In no branch of medicine may the objective demonstration of a beginning disease process be so elusive as in the early stages of myocardosis. The subjective phenomena far outweigh the objective physical findings. When there are demonstrable changes in the cardio-vascular system, the process can no longer be considered early. At the same time, however, certain small deviations from the normal, when taken into due consideration with the information elicited by careful history-taking, may confirm a presumptive diagnosis of myocardosis.

Functional Tests for Cardiac Reserve

In early myocardosis, there is usually no change in the electrocardiogram, or in the X-ray examination of the heart and great vessels. Neither are the blood pressure readings nor laboratory data materially altered. Therefore at this time it is only necessary to consider the tests for estimating the "strength of the heart" and the role of function tests assumes primary importance. The dictum that "altered function invariably precedes alterted physiology" is perhaps no better illustrated than in this disturbance.

Myers has shown that estimations of vital capacity may be used in determining loss of myocardial reserve power. When diseases of the lungs and mediastinum have been eliminated, this test is of considerable value. The procedure is quite simple and consists of the patient blowing water from one bottle to another, as devised by Pfluger. Rehfisch pointed out that the amount of expired air was less in the prone position than standing, the usual difference being about 10 per cent. The greater the degree of myocardial insufficiency the greater this ratio will be. Badly decompensated patients, for example, are unable to lie prone because of the dyspnea; in this condition the standing figures may exceed the prone values by as much as 1000 per cent. In beginning myocardosis, when the degree of insufficiency is slight, this test may yield valuable information; when there is a difference between the two tests, a definite loss of myocardial reserve is suggested.

Pulse Rate Tests: Of importance is the change of pulse rate after exertion. Such function tests have as their basis two factors in so far as the pulse rate in concerned—first, the degree of acceleration after a measured effort, and, second, the time interval required before its return to the resting rate.

The Kaufmann formula for the middle-age period designates a 25 per cent acceleration. For instance, a resting pulse rate of 80 increasing to 100 after effort shows normal reserve. Any percentage over the 25 per cent is considered presumptive evidence of myocardial deficiency. Resting pulse rates of over 90 in men more than forty years of age, and rates of more than 100 in women over forty years of age are also considered presumptive evidence of early myocardosis. This reading may be accepted if hyperthyroidism has been excluded.

The second phase of utilizing the pulse rate for functional efficiency is the length of time required to return the pulse rate to resting rate after exercise. An arbitrary figure accepted by some observers is five minutes. If the elapsed time is more than

five minutes there can be no question about loss of myocardial reserve.

Blood Pressure Tests: While the blood pressure phenomena occurring in young adults vary after activity and are difficult to interpret, this reaction in middle life and older age groups is much simpler and falls within certain well-defined clinical classifications. In otherwise normal individuals of from forty to fifty years of age, a rise in blood pressure will depend to some extent upon the occupation. An increase of systolic pressure up to 20 mm. is considered within normal limits. Amounts greater than this occur in hearts of low functional reserve, and suggest the changes found in myocardosis.

Vagal Response Test of Rehfisch: Normally, with each inspiration there is an acceleration of the pulse rate and with expiration there is a decrease. Vaquez and Kaufmann state that this phenomenon of the heart is lost in beginning failure. The Rehfisch test is performed as follows: Having obtained the patient's pulse rate, he is instructed to take as deep a breath as possible, and to hold it as long as he is able. In normal individuals up to fifty-five or sixty years of age the pulse rate will immediately fall, sometimes as many as 15 to 18 beats per minute. In the presence of myocardial change, the pulse rate may not fall, but will actually show an increase. In the badly damaged heart, for example, the breath holding test may be done with difficulty because of the dyspnea suffered by the patient. Rehfisch concluded that, if an individual could hold his breath long enough to reduce the pulse rate, the myocardium is more or less functionally intact. So far as the middle-age period is concerned, this point, if readily discovered, offers considerable evidence of early myocardosis.

The purpose of this paper has been to develop the syndrome of early myocardosis as one which may be recognized through the ordinary methods of examination, and thereby prevent such sufferers from being dismissed from the doctor's office with a clear label pasted on his record. It is the wish of the writer to consider this subject as a problem of preventive medicine, because at no stage of the failing heart can the doctor be of more service to the patient, family and community. The advanced types of myocardosis have been purposely avoided. Here the diagnosis is of no great difficulty, and, when recognized, the damage has been done and treatment, even at its best, is mostly futile.

Remembering that, even in its very earliest stages, a failing heart may show some slight deviation from the normal, it is the duty of every physician, upon finding this slight defect, to consider it with significance and exhaust his means to make a definite diagnosis. Even as with cancer, the sooner myocardial weakness is recognized and proper treatment instituted, the better the prognosis. The public should be informed by suitable legitimate propaganda the need for periodic health examinations, especially those individuals approaching middle life. In this way, many instances of beginning cardiac disease will be recognized, and, with correct therapy, many will enjoy more years of productivity and usefulness.

CONCLUSIONS

Heart disease leads all other causes of death, and in recent years there has been a growing menace from sudden acute cardiac failure in the prime of life.

The term chronic myocardosis is used to designate the wearing out process of the heart muscle, due to degenerative changes normally present in every individual reaching the half-way mark of life, as differentiated from chronic myocarditis which designates the alterations effected by disease.

The older methods utilized by the profession have not been sufficiently accurate or informative to permit an examination of a more satisfactory type.

The major subjective symptoms of heart failure are dyspnea, palpitation and substernal distress.

The dictum, "Altered function invariably precedes altered physiology," is perhaps no better illustrated than in this disturbance; therefore, the role of function tests in estimating the "strength of the heart" assumes primary importance.

In its very earliest stages, a failing heart may show some slight deviation from the normal. Periodic medical examinations of those individuals approaching middle age, and during middle age, will disclose these deviations, and, with correct therapy, many will enjoy more years of productivity and usefulness.

BIBLIOGRAPHY

The Failing Heart of Middle Life. Hyman & Parsonnet. Published by F. A. Davis Company. 1933. Pages 1-136.

XUM

THE EFFECT OF SALYRGAN (MERSALYL) ON THE ELECTROCARDIOGRAM.

N. BLOOM, M. D., and GRACE CASHON,
Richmond, Va.
Medical College of Virginia, Hospital Division

Salyrgan (mersalyl) is an organic mercurical diuretic containing 36 per cent of mercury in combination with sodium-salicyl-allyl-amido-acetate, and for years its diuretic action has been thought due to both a direct irritant effect on the kidney and also an extrarenal tissue effect, extracting water and sodium chloride from colloidal combinations (Keith and Whelan, 1926; Crawford and McIntosh, 1925; Bohn, 1923). Fodor in 1923 thought that it acted neither directly on the kidney nor on the tissues, but assumed a hypothetical center in the medulla regulating water and chloride metabolism on which the drug acted directly. Jackson in 1926 suggested a specific action, such as that of epinephrin or aconitine, basing his assumption on findings after injections of salyrgan in dogs. He found an immediate rise in blood pressure with a definite shrinking in kidney volume. As the dosages were increased definite changes in string galvonometer tracings were noted. Salant and Nagler, working upon the isolated frog heart in 1931, found that mercury in Ringer's solution in concentrations above 1:500,000 decreased the force as well as the frequency of contractions and the heart action often became irregular.

In an attempt to clarify somewhat the cardiovascular effect of salyrgan, we arranged for a heterogenous group of twenty convalescent pa ients with no evidence of cardiac disease to receive 2 c.c. of salyrgan intravenously, taking blood pressure and pulse readings with electrocardiograms before injection and repeating the readings at fifteen- and thirty-minute intervals following injection.

No serious untoward symptoms were noted in any patient. Three complained of a feeling of warmth following injections, two complained of pain in the arms injected. No evidence of hematuria or albuminuria could be found after injection.

CHART I

Before Salyrgan

	Disease	Age	B. P.	Auricular Rate P. R. Interval	Ventricular Rate Q. R. S. Interval	Abnormalities
1.	C. N. S. Syphilis	41	125/70	70, .16 sec.	70, .08 sec.	None
2.	Cardio-spasm	52	110/70	88, .16	88, .08	None
3.	Appendicitis post-operative	20	130/70	75, .16	75, .08	None
4.	Bronchiectasis	42	170/100	115, .14	115, .08	Deep S, Lead III
5.	C. N. S. Syphilis	43	120/70	94, .16	94, .08	None
6.	Lobar Pneumonia	27	100/70	88, .16	88, .08	Extrasystole, Notched Q. R. S., III
7.	Acute Pleurodynia	23	115/70	60, .20	60, .08	Bradycardia
8.	Upper Respiratory Infection	21	128/83	94, .12	94, .08	Notched Q. R. S., III
9.	Influenza	30	120/85	83, .14	83, .08	Deep S, III
10.	Acute Pleurodynia	28	115/60	71, .14	71, .06	Deep Q, Q. R. S. Slurred, III
11.	Combined Sclerosis	44	150/100	83, .14	83, .06	None
12.	G. C. Arthritis	22	129/90	105, .14	105, .08	None
13.	Subarachnoid Hemorrhage	33	120/80	75, .18	75, .08	None
14.	G. C. Arthritis	28	100/50	83, .16	83, .06	None
15.	Catarrhal Jaundice	39	110/68	65, .14	65, .06	None
16.	Pleurisy	38	98/60	71, .18	71, .06	Deep Q, III
17.	Duodenal Ulcer	33	110/70	83, .18	83, .06	Q. R. S. Slurred, III
18.	Bilateral Salpingitis, post-operative	21	135/95	107, .16	107, .06	None
19.	Bilaterial Salpingitis post-operative	26	115/80	136, .06	136, .06	Tachycardia, Low Q. R. S., I
20.	Varicose Veins	50	140/95	107, .16	107, .06	Low Q. R. S., III

CHART II

After Salyrgan

	15 MINUTES				30 MINUTES			
	B. P.	AURICULAR RATE, P. R. INTERVAL	VENTRICULAR RATE Q. R. S. INTERVAL	ABNORMALITIES	B. P.	AURICULAR RATE, P. R. INTERVAL	VENTRICULAR RATE Q. R. S. INTERVAL	ABNORMALITIES
1.	125/70....	71, .14	71, .08	None	125/70....	71, .14	71, .08	None
2.	120/80....	75, .16	75, .08	None	125/80....	75, .16	75, .08	None
3.	130/70....	75, .16	75, .08	None	130/70....	75, .16	75, .08	None
4.	170/90....	100, .14	100, .08	Deep S, III	150/90....	100, .14	100, .08	Deep S, III
5.	120/70....	94, .14	94, .08	None	120/70....	94, .14	94, .08	None
6.	100/70....	83, .16	83, .08	Ventricular, extra systole, notched Q. R. S., III	100/70....	83, .16	83, .08	Ventricular, extra systole, notched Q. R. S., III
7.	115/70....	50, .16	50, .06	Bradycardia	115/70....	56, .16	56, .06	Bradycardia
8.	125/80....	83, .12	83, .08	Notched Q. R. S., III	123/80....	88, .12	88, .08	Notched Q. R. S., III
9.	120/85....	75, .16	75, .08	Deep S, III	120/80....	83, .14	83, .08	Deep S, III
10.	115/60....	65, .14	65, .06	Deep Q, Slurred Q. R. S., III	115/60....	65, .14	65, .06	Deep Q, Slurred Q. R. S., III
11.	150/100....	83, .14	83, .06	None	150/100....	83, .14	83, .06	None
12.	129/90....	105, .14	105, .06	None	129/90....	105, .14	105, .06	None
13.	120/80....	79, .18	79, .08	None	120/80....	85, .18	85, .08	None
14.	100/50....	75, .16	75, .06	None	100/48....	75, .16	75, .06	None
15.	110/63....	65, .14	65, .06	None	110/64....	65, .16	65, .06	None
16.	100/60....	70, .14	70, .06	Deep Q, III	100/60....	70, .16	70, .06	Deep Q, III
17.	110/70....	83, .18	83, .06	Slurred Q. R. S., III	100/70....	83, .18	83, .06	Slurred Q. R. S., III
18.	135/97....	115, .12	115, .06	None	135/100....	107, .16	107, .06	None
19.	115/80....	110, .16	110, .06	Low Q. R. S., I	115/80....	107, .16	107, .06	Low Q. R. S., I
20.	135/88....	94, .16	94, .06	Low Q. R. S., III	125/85....	98, .16	98, .06	Low Q. R. S., III

The electrocardiographic changes noted in Chart I were not considered unusual or evidence of any cardiac pathology except Case 4, in which the patient was found to have a definite hypertension with evidence of left axis deviation in the tracing.

After salyrgan blood pressure readings were not altered. Twelve patients had lessened pulse rate, which was thought to be due to relaxation and loss of fear.

CONCLUSIONS

1. Salyrgan in therapeutic doses does not effect blood pressure or pulse.

2. Salyrgan in therapeutic doses has no effect on the electrocardiogram.

3. No toxic symptoms were elaborated in twenty patients after the intravenous administration of salyrgan.

BIBLIOGRAPHY

Keith, Normal M., and Whelan, Mary: A Study of the Action of Ammonium Chloride and Organic Mercury Compounds, *Jour. Clin. Invest.*, 3:149, Oct., 1926.

Crawford, J. Hamilton, and McIntosh, J. F.: Observations on the Use of Novasurol in Edema Due to Heart Failure, *Jour. Clin. Invest.*, 1:333, April, 1925.

Bohn, H.: Experimentelle Studien uber die Diuretische Wirkung des Novasurol, *Klin. Wchnschr.*, 1923, II, 352.

Fodor, E.: Uber das Indikationsgebiet des Novasurols als Diuretikum, *Med. Klin.*, 1923, XIX, 684.

Jackson, D. E.: Pharmacological Action of Mercury in Organic Combination, *Journal Pharmacology and Exper. Therapy*, 27, 244.

Salant, William, and Nagler, Harold: *Journal of Pharmacology and Experimental Therapeutics*, Vol. 41, 407-421, 1931.

PREVENTIVE PEDIATRICS.*

WM. FOSTER BURDICK, M. D.,
Washington, D. C.
Instructor in Pediatrics, Georgetown University; Associate Attending Physician, Children's Hospital

In giving this paper it is not the desire of the author to present anything particularly new or peculiar in the subject matter, but rather to develop a concept which perhaps is not common to all. The term preventive pediatrics is not a good one but is used for the want of a better one. It implies far more than the prevention of disease and is used rather as a mental view-point from which the subject of pediatrics is approached. The approach to pediatrics is through disease or medicine; in preventive pediatrics the approach to the subject is through the child. Only a few conditions are distinctly peculiar to childhood and these are related to development. The ordinary conception of pediatrics is that it is the practice of general medicine less the degenerative processes. In preventive pediatrics we are primarily interested in the child, in his normal growth and development and in the means of attaining normalcy. We are interested in the prevention of morbid or abnormal conditions through general means and by specific means. We are interested in his normal mental development and psychology. By a study of the child it has been learned that no small part of the deviations from normal health and development have their origin not in bio-chemical or biological causes, but in habits, mental reactions, and psychological conflicts. There is a demand on the part of the general public for a physician to care for their children who knows something more than the diagnosis and treatment of disease in childhood and who has the knowledge to guide the growth and development of the child. In the term preventive pediatrics, then, we look for knowledge which will enable a child to be well born, to come into the world strong and healthy, to thrive lustily and without halt during infancy, to develop and grow in a normal way during childhood, to be able physically and mentally to acquire a sound education, to acquire good habits of living and avoid bad ones, to avoid psychological abnormalities so that the child adjust himself to his social environment, to pass through the difficult period of puberty and adolescence into a sound maturity, to prevent ill health through maintenance of good health, to prevent by scientific measures so far as we are able the infectious diseases of childhood.

The subject matter divides itself naturally, into two main fields: One the material which has to do with the normal development of the child, the physical and mental growth, nutrition and diet, hygiene, psychology, etc. The second has to do with the specific methods of prevention of abnormal conditions and diseases peculiar to or of frequent occurrence in the period of infancy and childhood.

1. In the development of the first part of our subject it is necessary to say something about heredity. The physician should know something about the diseases and conditions which are clearly inherited and be of some influence in his teaching of parents as to the types of marriages to be avoided. Some of these are: Huntington's chorea, diabetes insipidus, syphilis, muscular atrophy, hemophilia and certain skeletal characteristics such as polydactylism, syndactylism, etc. Our influence in this field is perhaps more limited than in some of the others to be discussed.

Environment is most influential in bringing about the desired end-result in children. It is perhaps more important than heredity. Most of our difficult problems in pediatrics have their deep seated roots in environment, and very little can be done to solve these problems unless we approach them through the environment. Discussion with parents concerning home life and their methods are most helpful to child, parent and physician.

Child guidance is one of the very most important and fruit-bearing duties of the physician dealing with the child. The intelligent handling of temper tantrums, head banging, bed wetting, etc., is paramount. The most difficult thing for many parents is to acquire a sympathetic point of view.

*Read before the George M. Kober Medical Society, October 22, 1934.

This can only be done by meeting him on his own mental level. The best insurance of happiness and useful citizenship that any child can have is a happy home life with understanding parents.

Pre-natal care, while the duties of it fall to the obstetrician, must be taken up with the subject of preventive pediatrics. The treatment of syphilitic mothers can bring about normal children. The reduction of prematurity is a fertile field and needs more attention. Aside from these few conditions it is believed that an abundance of minerals, calcium and vitamins during pregnancy plus good general health of the mother has a very vital bearing on the fundamental structure and resistance of the newborn infant.

Early infant care from the moment of birth is just as important as the medical care of the mother, for it has been shown that half of the infants who die in the first year of life die during the first month. There is need for more and better knowledge of the processes of growth during the first few weeks of life and this is a fertile field for our bio-chemists and laboratory workers.

The nutrition and diet and prevention of malnutrition is most important in preventive pediatrics. It is here that our knowledge is most abundant, although much progress has been made in the past decade, no doubt even greater strides will be made in the next. The field of vitamin therapy has been over-worked, but there are still many hidden secrets. The vitamine deficiency diseases are seldom seen in a well ordered general or pediatric practice nowadays, but not more than a fortnight ago the writer saw a full-blown case of scurvy in consultation in one of our best residental sections. The baby did not like orange juice supposedly, so didn't get it or any other vitamin C in appreciable quantity, so at the age of one year was suffering from what good preventive pediatrics could have spared her. It is believed that the advent of vitamin D milk will greatly reduce the incidence of rickets. Not that this can be relied upon solely, for some infants require a great deal more vitamin D than others, so that cod liver oil still has a place and shall continue to have until more is known about all the factors which are active in producing rickets.

Breast feeding, all too frequently impossible in these days, is still of the utmost importance. Even if the baby can only have a few weeks on the breast and that only "part time," it is believed worthwhile. Delicate and premature babies are far more easily started on breast milk than on a formula, and we believe that they derive immune bodies as well which we can't put in a formula. Something must be said, however, about keeping the baby on the breast too long. Some of the most miserable specimens of malnutrition and unhappy babies are those who have nursed too long. Most textbooks teach us to wean at nine months—the writer believes that eight months or even younger might be better. Even though the baby gets an adequate supply of breast milk he should have, from an early age, orange juice and cod liver oil. The older idea that if the baby is breast fed it need not be taken to the pediatrician until a bottle is needed is not good preventive pediatrics and is to be condemned in the interest of the child. Cereals and vegetables are needed at an early age just as in the bottle-fed baby. In the past our textbooks have taken up too much space about computing artificial formulae and have not emphasized the proper importance of nursing at the breast at least for a time; and in the final analysis there is nothing so difficult about formula writing. If the baby gets between 1.5 and 2 oz. of milk per pound of expected body weight per day and enough carbohydrate added to give him 50 calories per pound, he will be satisfied and be able to grow and develop normally.

Many striking facts about nutrition and growth will be brought out in the future around the glands of internal secretion. Suffice it to say here that the prevention of simple goiter, myxedema, and the treatment of cretinism hold an important place in preventive pediatrics.

The prevention of specific diseases occupies a high place in our concept of preventive pediatrics. It is here that we can do a great deal and it is to be hoped that in the near future there will be still more diseases for which we can offer definite protection. Perhaps it would be well to run over these diseases and the ones for which we have hope in the future. Every child at the age of five or six months should be actively immunized against diphtheria. The alum precipitated toxoid seems to have a definite value over the older toxin-antitoxin or toxoid. One injection is made instead of two or three of the plain toxoid or toxin-antitoxin. The work is not completed until the Schick test has been done later and proven to be negative.

Every child should be vaccinated against small-

XUM

pox at an early age. Some time during the first or second year is far better than later at the school age for many reasons. In the first place he won't get smallpox, and in the second place the post-vaccinal complications are far less than frequent.

We should never see a case of typhoid fever, but in our children's Hospital as well as occasionally in private practice we do see cases every summer and fall. For this reason, it is believed that we are lax in the use of anti-typhoid vaccine. No harm can come of it, so why not vaccinate every child in our practice at the age of two years when he begins to get away and boiled milk, boiled water, etc., are not used.

The milk borne diseases are prevented by boiling the milk, and let no parent with a quasi-medical knowledge persuade you to use raw milk unless it be certified, and even then it should be boiled for young infants. The old summer diarrheas have been irradicated through boiling milk and our modern electric refrigeration. It is not to be forgotten, however, that some of our patients from the outlying districts don't have the advantage of electric refrigeration and the old ice box has to be relied upon. These mothers need special instruction about foods for the small infant and keeping of them from one day to the next in hot weather.

It is to be hoped that in the near future we shall have specific means of protection against whooping cough and poliomyelitis.

It is regretted that time and space do not permit a fuller discussion of many of the factors, a knowledge of which must be had, before one can practice good preventive pediatrics. A thorough knowledge of disease etiology, pathology and treatment must be developed, but we must go further. In a very sketchy manner, I have tried to point out the way to the proper concept of preventive pediatrics. The approach is through the child and not disease.

The pediatrician must be familiar with home surroundings and, for this reason, the Clinic and Child Hygiene centers, while they have their place, can't practice good preventive pediatrics for they can't go all the way. Private practice through intimate personal contact and acquaintance with the parents and children can reach the ideal. The Clinic or Child Hygiene center serves a useful purpose in stimulating an interest in children and their proper growth and development, but the practice of good preventive pediatrics can only be developed by the child's private physician. It can't be done where a different doctor sees the child at each visit, and who has no chance nor the time to familiarize himself with all conditions about which the child is surrounded. Early contact with the home should be made so the physician can judge the type and character of environment in which the child will have to grow up. Some enthusiastic child health workers have expressed the view that the conferences are of such tremendous importance and value that their services should be extended to all classes and be provided for all children at public expense, regardless of economic status. This is based upon a superficial knowledge and an incomplete understanding of preventive pediatrics. This means making general use of a poorer method when a better one is at hand.

The ideal of preventive pediatrics has been well expressed in the vernacular of the automobile, "The work of the pediatrician should be that of the service station rather than that of the repair shop." This can only be accomplished through frequent, thorough, and intelligent physical examinations (with records thereof kept on file), begun at birth, repeated several times in the first few months, followed by monthly examinations during the first year, bi-monthly in the second year, semi-annually until the sixth year, and the annual examinations through adolescence.

5430 Connecticut Avenue, Northwest.

THE END-RESULTS OF DENTAL FOCAL INFECTION FROM A MEDICAL VIEWPOINT.*

WM. H. HIGGINS, M. D.,
Richmond, Va.

Dental infection is older than the human race. In animals evidences of caries and pyorrhea alveolaris have been found in the fossilized remains of primitive vertebrates of the Paleozoic era. The first written notice of oral infection as a cause of systemic disease is said to occur in the writing of Hip-

*Presented as part of a symposium on Dental Focal Infection before the Richmond Dental Society, November 5, 1934.

pocrates and occasional references are found in the works of many ancient and medieval writers.

In an audience of this kind the orthodox approach to the subject and the line of least resistance would be to review the admirable work of Rosenow in showing the selective action of certain bacteria in focal infection and to report the clinical studies of Billings on the beneficial results of the removal of dental caries on systemic disease. However, medicine, like other sciences, is being put on the spot, so to speak, and many of our earlier impressions are being revamped in the light of advancing knowledge. Focal infection in its relation to systemic disease is undoubtedly one of the major bulwarks in our attack on the cure and prevention of many pathologic abnormalities. Experimentally gastric ulcer, nephritis, endocarditis and other diseases have been reproduced but only after enormous quantities of virulent cultures, corresponding to one-half pint in human beings, have been given intravenously to animals. Although these laboratory procedures prove the theory of focal infection, yet it leaves a great deal to other contributory factors when we consider the actual amount of potentially pathogenic organisms in a dental granuloma. That disappointing results frequently follow the removal of foci of infection has been the experience of all of us. Pemberton, in his study of 400 arthritic soldiers, writes: "184 patients or 46 per cent recovered in the presence of demonstrable surgical foci. This is nearly three times the number which improved after the removable of foci." Apperton, reviewing the records of drafted men during the World War, showed that recruits exhibiting dental disease did not show an undue incidence of arthritis, gastric ulcer, endocarditis or muscular rheumatism. Last year at the University of Pennsylvania, Arnett and Ennis made a detailed study of 883 students with special reference to dental infection and evidences of present or past disease. Their conclusion was: "While these data offer no support for the view that dental infection causes rheumatism, chorea, valvular heart disease or electrocardiographic abnormalities in these college students, yet if the body resistance should be lowered by exposure, hardship, or advancing years it is possible that such might be the case.

How then would we evaluate our end-results after dental therapy in the light of these findings? The fact that the majority of adults have areas of infection and only a small minority of us show demonstrable systemic effects indicates that there are certain basal considerations which operate in every case. The more one studies arthritis for example, the more one realizes that a combination of factors is at work to produce the disease. In addition to a search for focal infection, especially dental, no thoughtful student of medicine would under-estimate such contributory agents as heredity, age, fatigue, worry, or certain physiological disturbances either directly or indirectly referable to dental infection. It is clear, therefore, that in addition to the local effect of bacteria there must also be considered their influence through a less obvious and probably chemical mechanism. There is still to be considered the influence of these ill-defined toxins upon the physiologic processes of the body as a whole. It is, therefore, of importance to inquire as far as possible into those disturbances of the normal physiological activities which make infection possible and to end-results of such an invasion.

With this diagnostic approach to the subject of dental focal infection clearly before us, it is possible to consider the role of oral infection in general diseases.

The distant effects of dental infection are usually caused by the streptococcus group. The most thoroughly studied cases have been those of infectious arthritis. Cecil has succeeded in isolating from both the blood and joint fluid the same type of streptococcus as found in the apex of an infected tooth. Associated with infectious arthritis there is often involvement of the muscles, tendons, and bursae by the same organism. Next to joint diseases one naturally thinks of endocarditis of either the rheumatic or bacterial type. Although never definitely proven there is reason to believe that the pre-existence of peridental infection is a causative factor.

Another interesting group of metastatic infections are those of the iris and uveal tract. DeSchweinitz states that there is no better established etiological relationship than that between septic foci in dental areas and certain diseases of the eye, especially those of the uvea.

The relation of dental infection to mental disease has received extensive investigation, particularly at the hands of Cotton. He believes that a great many toxic psychoses are the result of dental infec-

XUM

tion and has brought about an appreciable improvement by proper dental hygiene.

To summarize, we may state in the light of our present knowledge the following conclusions:

1. Dental infection bears a very definite causal relationship to certain systemic diseases. Its potentialities, however, are dependent upon definite contributory factors which are necessary in the production of disease.

2. The beneficial results following dental therapy are in direct proportion to the ability of the physician to cope with the non-bacterial factors entering into the production of the disease.

3. Until the medical profession can obtain a clearer comprehension of the *modus operandi* of focal infection and the factors necessary in the production of systemic disease our therapeutic results will be disappointing.

712 Medical Arts Building.

Miscellaneous

REMINISCENTIAE
DE CLASSE 1895-1935
COLEGII MEDICALII VIRGINIAE.*

By DR. H. U. STEPHENSON

To the old Egyptian building strayed I yesterday;
Methought, forsooth, familiar faces greet I would—
But scanned in vain, as on the portico I stood,
Each stranger as he hurried by upon his way.
Depressed was I, for visions of another day,
In crystal fancy, of the treasured past I could
Discern. Ah, pleasant contacts many; meet I should
Relive those scenes of forty years ago today!
Uprose "Doc" Taylor and Chris. Baker's ebon shade,
And tutors, students—classmates now departed—too.
E'en at the festive board tonight, in spirit, they,
On respite brief from Hadean realm—where long they've staid—
Have come once more, old pals, to live those scenes anew
With us, on this, our fortieth anniversary.

*Composed and read by Dr. Stephenson on the occasion of the reunion of the class of '95, Medical College of Virginia.

Abstracts

A Critique of Proposed "Ideal" Sterilization Legislation.

Abraham Myerson, M. D., of Boston, Mass., in a paper appearing in the March, 1935, issue of the *Archives of Neurology and Psychiatry*, states that this discussion does not concern itself with sterilization as a rational, well thought out measure, applicable to individual cases of feeble-mindedness and mental disease. Personal researches concerning the hereditary factor in mental diseases and mental defects have led to the logical conclusion that from the biologic standpoint there are persons who should be sterilized in order that their particular type of mental disease or defect shall not be transmitted to succeeding generations. Whatever may be the theological or legal attitudes toward such psychiatric situations, the psychiatrist, as one whose point of view is biologic, must agree that a limited program of sterilization is eugenically sound. Whether such a program would be practical, or whether it would override legal rights, which are to a certain extent as important as biologic rights, is not a matter for consideration in this study.

This article specifically attacks as extravagant and as approaching mania a proposed sterilization law set up as the ideal by certain important eugenists. Eugenics is, in his opinion, being made ridiculous as well as a threat to civilized life by the law under consideration. If one examines the writings of important workers in the field of biology, psychiatry and eugenics, one finds no justification whatever for the proposed program.

Dr. H. H. Laughlin in a monograph discussed at great length the litigation under the Virginia sterilization statute which led to the notable decision of the Supreme Court of the United States upholding the statute.

Dr. Laughlin gave the following definition: A socially inadequate person is one who by his or her own effort, regardless of etiology or prognosis, fails chronically, in comparison with normal persons, to maintain himself or herself as a useful member of the organized social life of the state.

Dr. Myerson calls attention to the fact that in some of the definitions there occurs the term "regardless of etiology or prognosis," which obviously is uncandid, since if a socially inadequate person is not such by heredity he becomes irrelevant to the legislation proposed. That is, if the social inadequacy is created through some environmental mishap, then certainly the case does not merit any consideration from the standpoint of sterilization.

Note the term "as a useful member of the organized social life of the state." Who shall say who is a useful person? In a capitalistic society a communist can scarcely be declared a useful mem-

ber of the social life of the state. In a Bolshevik society the capitalist falls at once into the class of the useless. In times of war the pacifist will be defined by all true patriots as worse than useless. In Hitler's Germany, the Jew at one fell swoop is declared as of no value to the state, regardless of the fact that as an Einstein, a Zondek or a Willstatter he may be a brilliant scientist contributing hugely to the welfare of the world. It would be easy to declare that Edgar Allan Poe was a useless member of society, and certainly Francois Villon, whose name has outlived that of the useful people of his time, was of no special value to the organized state. And so on, and so on.

He says, I now come to the crux of the matter—a definition of the socially inadequate classes, and quotes the Virginia law:

The socially inadequate classes, regardless of etiology or prognosis are the following: (1) feebleminded; (2) insane (including the psychopathic); (3) criminalistic (including the deliquent and wayward); (4) epileptic; (5) inebriate (including drug-habitues); (6) diseased (including the tuberculous, the syphilitic, the leprous, and others with chronic, infectious and legally segregable diseases); (7) blind; (8) deaf (including those with seriously impaired hearing); (9) deformed (including the crippled); and (10) dependent (including orphans, ne'er-do-wells, the homeless tramps and paupers).

Again he repeats that unless the defects in the groups specified are of hereditary origin their citation in a law of this kind is irrelevant or, if not irrelevant, conceals some purpose which must be challenged at the outset.

In a study which he carried out for the Commonwealth of Massachusetts, which was published in 1930, a survey of the persons confined to institutions was made. Even among these "worst" families there were normal branches producing worth while persons. And for any one of these families there were a dozen in which the feeble-minded member was a solitary defective occurring in an otherwise normal familial group not in any way to be distinguished from the rest of the population.

He quotes Popenoe as saying, in regard to California, apparently the greatest number of institutional feeble-minded are the children of the skilled laborers, not of the paupers or the casual laboring class. The same is true of the retarded school children of Munich.

The difficulty with studies such as those sponsored by the eugenists of Cold Spring Harbor is that a wide variety of conditions are lumped together as one; whole diversities of things are artificially united. Thus, if a father has a sick headache and his descendant has dementia praecox, the two conditions are linked together in a hereditary chain.

Regarding crime, in fact, crime is mainly a matter of social definition. An act which is criminal today may have been legitimate yesterday and may be legitimate again tomorrow, for example, the sale of liquor. If one includes in the "criminalistic" group the delinquent and wayward, and especially if one includes those guilty of sex delinquency, then one would have had to impose sterilization on some of the finest figures in the world's history—the greatest poets, the finest painters, the most brilliant writers, the leaders of nations—as well as on every second man and probably on every third woman in the community.

With epilepsy science is now attacking the problem on the very practical and direct bases of the make-up of the brain, the chemical composition of the blood and the interchange of gases and fluids which takes place in the body.

When to the aforementioned absurdities is added the inclusion of the blind, the deaf, the crippled (which category would include the President of the United States) and the dependent, orphans being clamped together with tramps, the whole thing becomes a mess of incomprehensible bias. Eugenics, like politics, makes strange bedfellows.

He quotes from the law: The term "cacogenic" person as herein used is purely a legal expression and shall be applied only to persons declared, under the legal procedure provided by this act, to be potential parents of socially inadequate offspring.

And what is a potential parent of socially inadequate offspring, alias a "cacogenic" person?

The state eugenist, who is to enforce this law by detecting such potential parents, will need to be not a scientist but a clairvoyant. Imagine the graft, the blackmail and the generally muddled and corrupt social reactions involved in this proposal! The enforcement of the prohibition law would have been a simple problem, free from corruption and graft. as compared with the determination as to who is a potential parent of socially inadequate classes. Either the proponents of this legislation are naive beyond simple powers of expression, or else—what?

XUM

He ends by saying; it becomes a duty, therefore, both from a scientific and from a social standpoint, for neurologists and psychiatrists to attack vigorously and destroy any such eugenic proposals as those here considered before they become translated into the reality of laws which will destroy freedom and individuality.

BEVERLEY R. TUCKER, M. D.

Public Health Statistics

I. C. RIGGIN, M. D.
State Health Commissioner of Virginia

The communicable disease reports received at the office of Dr. G. F. McGinnes, State Epidemiologist, during the month of May, 1935, show the following cases compared with the same month in 1934:

	1935	*1934*
Typhoid and Paratyphoid Fever	24	32
Diphtheria	55	46
Scarlet Fever	95	101
Measles	2,293	5,103
Meningitis	42	7
Poliomyelitis	4	0
Rocky Mountain Spotted Fever	5	5
Typhus Fever	0	2
Undulant Fever	2	3
Tularaemia	3	1
Smallpox	0	0

During the summer of 1935 "The Summer Round-Up," which is a physical examination of children who will enter school for the first time in the fall, will be conducted in many of the cities and counties of the State. This program is sponsored not only by the Medical Society of Virginia, The Virginia Congress of Parents and Teachers, and the State Departments of Education and Health, but also by the American Medical Association, The American Child Health Association, and other State and National organizations. Physical examination of all children before entering school for the first time is also one of the chief objectives of the National Congress of Parents and Teachers.

The value of Summer Round-Ups cannot be overemphasized. During these Round-Ups the preschool children are given thorough physical examinations by physicians, at which time the parents are notified of existing defects and urged to have all remediable defects corrected before the child enters school, thereby giving each child the best opportunity of entering school physically fit. Parents are also advised to have their children immunized against diphtheria and vaccinated against smallpox at this time if it has not been done before.

In the past, Summer Round-Ups in Virginia have shown that approximately 80 per cent of the children examined needed some correctional work.

According to the records of the State Department of Health, 4,848 children, or approximately 15 per cent of the white children entering school, were examined during the pre-school Round Ups in 1934. These examinations were reported to the State Department of Health by the following cities and counties:

Counties	*Examinations*
Albemarle	31
Alleghany	17
Amherst	93
Arlington	230
Augusta	679
Brunswick	87
Caroline	5
Charlotte	127
Chesterfield	86
Culpeper	12
Dinwiddie	9
Fairfax	50
Frederick	52
Giles	13
Grayson	62
Hanover	75
Henrico	478
Henry	52
James City	47
King and Queen	54
King William	44
Mecklenburg	12
Nottoway	57
Page	17
Powhatan	76
Prince Edward	150
Prince George	61
Princess Anne	54
Roanoke	115
Rockbridge	280
Russell	6
Shenandoah	53
Southampton	117
Spotsylvania	4
Stafford	83
Sussex	21
Tazewell	66
Warren	135
Wythe	116
York	22
Total for counties	3,748

Cities	*Examinations*
Alexandria	217
Lynchburg	331
Newport News	25
Norfolk	326
Petersburg	24
Portsmouth	177
Total for cities	1,100

Woman's Auxiliary to the Medical Society of Va.

President—MRS. JOSEPH BEAR, 3012 Monument Ave., Richmond.
President-Elect—MRS. FLETCHER J. WRIGHT, Petersburg.
Recording Secretary—MRS. JAMES B. STONE, 2042 Park Ave., Richmond.
Corresponding Secretary—MRS. AMBROSE MCGEE, 4107 Kensington Ave., Richmond.
Treasurer—MRS. REUBEN F. SIMMS, 2034 Park Ave., Richmond.

National Meeting.

The Convention of the Woman's Auxiliary to the American Medical Association and the Canadian Medical Association which was held in Atlantic City, N. J., June 10th-14th, was one of the finest in the history of both organizations, not alone because of the splendid tone of its program and excellent cooperation but also due to the fact that the hostesses had as their leader, Mrs. Robert W. Tomlinson, her able staff of officers, and the assistance of committees from New Jersey, Pennsylvania and Delaware Auxiliaries. It was a meeting that will linger long in our memories.

I had the privilege of attending the National Board dinner in honor of Mrs. Tomlinson, National President, which was held at Claridge Hotel, June 9th, 7 P. M. The Woman's Auxiliary to the Medical Society of Delaware was hostess. Guests from her native city, Wilmington, and officers of other organizations throughout the State of Delaware spoke of her active participation in varied clubs and societies also her achievements during the past year as President of our National Auxiliary. We from Virginia join them in vociferous praise of her accomplishments.

Monday, June 10th, 10 A. M., the Pre-Convention Board Meeting was held at Hotel Traymore. Many valuable recommendations were presented. At one o'clock a luncheon was held in Submarine Grill of same hotel which was followed by another Board Meeting at 2:30 P. M. The "Get Together Dinner" at Ritz-Carlton Hotel followed by a musical and reception in honor of Canadian visitors was an outstanding feature.

Tuesday, 8 A. M., the ever-popular Southern breakfast took place at Traymore Hotel. Guests of honor were Mrs. Robert W. Tomlinson and Mrs. Rogers N. Herbert, President-Elect. Mrs. J. Bonar White, President Woman's Auxiliary to Southern Medical Association, presided. Quite a large delegation from Virginia were present. At 9 o'clock the general meeting of Woman's Auxiliary was opened. Mrs. James Hunter, of New Jersey, greeted the delegates and guests and Mrs. Jordan, of Alabama, responded very graciously. On Wednesday, 9 A. M., the meeting was continued. The reports of various Auxiliaries throughout the country were read by State Presidents; they were well received and exhibited noteworthy work. A special vote of thanks and welcome was extended our newest acquisition, the Auxiliary to the New York Medical Society. A reception and Auxiliary luncheon in main dining room of Traymore Hotel followed with Dr. L. G. Rowntree, Director, Philadelphia Institute of Medical Research, as guest speaker. His talk was most informative. After greetings from many past and present officers, Dr. Morris Fishbein presented Dr. DeFoe, of "Quintuplet Fame." Our Canadian neighbor was received with acclaim and the intimate story of these marvelous children was instructive as well as interesting.

Thursday, 9 A. M., I attended a group discussion on "Program and Health Education," and at 10 A. M., the Post-Convention meeting, with Mrs. Rogers Herbert presiding. Her address was inspiring and the Board pledged their earnest support. The "Bring Your Husband Dinner" was held at Traymore Hotel at 7 P. M. and the President's reception and ball at 9 P. M. at the Ambassador Hotel with many thousand physicians, wives and daughters present.

The Credentials Committee reported that eight thousand two hundred physicians registered. A total Auxiliary registration was eighteen hundred and forty-nine which included one guest from England.

The exhibits were attractively displayed and here, too, we were represented with attractive posters and

XUM

a huge scrapbook. I take this opportunity to thank Mesdames H. M. Snead, Southgate Leigh, of Virginia, and Mrs. Henry R. Miner, of Nebraska, National Chairmen of Exhibits, for their interest and cooperation.

I gratefully acknowledge the genial cooperation of delegates and alternates during the Convention.

(MRS. JOSEPH) KATE C. BEAR, *President,*
Woman's Auxiliary to the Medical Society of Virginia.

James City, New Kent Medical Auxiliary.

The May meeting of this Auxiliary was held at the home of Mrs. B. I. Bell, of Williamsburg, with Mrs. A. M. Sneed, of Toano, the new president, presiding.

The Auxiliary unanimously voted to present the colored training school with *Hygeia,* the first issue to start in September, thus helping to swell the number during *Hygeia* drive. It was voted to send a shower of cards to Mrs. J. R. Parker, one of our members, who is quite sick.

Mrs. Sneed, accompanied by her daughter, entertained with two solos. Refreshments were served after which the meeting adjourned. The July meeting will be held at the home of Mrs. J. R. Tucker, of Williamsburg.

(MRS. L. V.) MABEL HENDERSON,
Reporter.

The Auxiliary of the Lynchburg Academy of Medicine

Has put on a campaign for membership, our goal being the enlistment of every physician's wife.

At the last meeting, a contribution of fifteen dollars was voted to the Madison Heights school to be used for feeding the undernourished children. Plans were made also for a bridge party to raise funds for our work. A telephone committee was appointed by the president to call members and remind them that unpaid dues should be sent in now.

(MRS. ERNEST G.) ADELE SCOTT,
Secretary-Treasurer.

Richmond Auxiliary.

The last meeting for the year of the Richmond Auxiliary was held June 19th at the home of Mrs. William T. Sanger.

Interesting reports were given of the National meeting at Atlantic City by members who attended the convention, and plans for the coming year were discussed with much enthusiasm being shown in the prospects of a successful future.

Truth About Medicine

Thirtieth Anniversary of the Council on Pharmacy and Chemistry. On February 11th, the Council on Pharmacy and Chemistry completed its thirtieth year of service to the medical profession. For nearly a third of a century it has made contributions of inestimable value to rational therapeutics. Of the personnel of the Council, which serve entirely without remuneration, four members have been active ever since its organization in 1905. A comparison of the conditions prevailing in the marketing of drugs in this country before 1905 and those obtaining today indicates the debt that American medicine owes to the Council on Pharmacy and Chemistry. The rules governing the acceptance or rejection of remedies adopted in the beginning have gradually been amplified and clarified to meet new conditions. Advertising claims employed by manufacturers of pharmaceuticals for products accepted by the Council have attained standards of accuracy and truthfulness unequaled in any other field of marketing. *The Journal A. M. A.* and many other medical publications in this country, including the journals of all the state associations with the exception of Illinois, accept advertising for Council-accepted or official drugs only. But the Council's work would have come to naught had it not been for the militant aid of *The Journal A. M. A.,* and the ever increasing support of the medical profession.

In addition to its other activities, the Council issues several books: New and Non-official Remedies (revised yearly), Useful Drugs, the Epitome of the U. S. Pharmacopeia and National Formulary, and (in cooperation with the Council on Medical Education and Hospitals), Hospital Practice for Interns. It continues its important tasks, ever increasing in number and volume, unselfishly and with intelligence and foresight. It merits unfailing support by the medical profession. (Jour. A. M. A., February 9, 1935, p. 478.)

Accepted Devices for Physical Therapy

The following apparatus have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Victor Micro-Surgical Diathermy Unit.—This unit is intended for surgical use only. It is designed primarily for electric coagulation and electric desiccation, but can also be used by certain specialists for straight diathermy to some parts of the body, such as the head, sinuses, ears and eyes, whenever such treatment is indicated. The General Electric X-Ray Corporation, Chicago. (Jour. A. M. A., February 2, 1935, p. 397.)

Aloe Double Therapy Lamp.—This unit is called a double therapy carbon arc ultraviolet lamp, because it is possible to make use of the various kinds of carbon, for example, the A Sunshine Carbon, the C therapeutic carbons and the K carbons. It combines in one unit a

carbon arc and a ring type infra-red generator. The mechanism of the unit is so arranged that either the carbon arc or the infra-red burner may be used independently of the other or the two units may be used simultaneously. A. S. Aloe Company, St. Louis, Mo. (Jour. A. M. A., February 16, 1935, p. 562.)

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Merck & Co., Inc.
Ephedrine Alkaloid (Hemihydrate).
Ephedrine Hydrochloride.
Ephedrine Sulphate.

The National Drug Co.
Ampul Solution of Dextrose, 10 Gm., 20 c.c.
Ampul Solution of Dextrose, 25 Gm., 50 c.c.
Ampul-Vial Solution of Dextrose, 25 Gm., 50 c.c.
Ampul-Vial Solution of Dextrose, 50 Gm. 100 c.c.

E. R. Squibb & Sons.
Refined Diphtheria Toxoid Alum Precipitated, one 1 c.c. vial package.
Refined Diphtheria Toxoid Alum Precipitated, ten 1 c.c. vials package.
Refined Diphtheria Toxoid Alum Precipitated, one 10 c.c. vial package.

Book Announcements

Useful Drugs: A List of Drugs Selected to Supply the Demand for a Less Extensive Materia Medica With a Brief Discussion of Their Actions, Uses and Dosage. Edited by ROBERT A. HATCHER, Ph. M., Sc. D., M. D., and CARY EGGLESTON, M. D. Prepared under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Ninth Edition. Cloth. Price, 60 cents. 203 pages. Chicago. American Medical Association. 1934.

The reviewer of this most excellent text can hardly describe this book in a way better than that given in a review of it in the *Journal of the American Medical Association,* Vol. 104, Page 859, 1935, as follows:

"This book represents a valuable and increasingly effective phase of the efforts of the Council on Pharmacy and Chemistry on behalf of rational therapeutics. Since its first appearance in 1913 it has become a recognized work in its field. It has been adopted as a textbook by teachers of therapeutics in the best medical schools and by various examining and licensing boards. The various editions and revisions since that time have been undertaken in the effort to keep it abreast with the advance of therapeutics. Drugs that have become obsolete have been deleted, and others the value of which has become established have been added. The statements of actions, uses and dosage of the various drugs are revised after discussion by the whole Council. They represent the latest and best results of therapeutics and pharmacologic revision. The present edition is in line with the constant aim of the Council, which has been to present a selective and informative yet comprehensive compendium of the more useful preparations in the medical armamentarium. There have been some additions to the list of drugs and a few have been deleted. Individual descriptions show evidence of careful editing.

"Typographically the text is an improvement on previous editions by reason of more generous spacing, which makes it easier on the eyes. As it stands, the book is an authoritative, intelligent, critical and entirely adequate textbook for the use of teachers and examiners, as well as for reference by the busy practitioner. It is an integral and constructive part of the Council's efforts in the promotion of the rational use of drugs."

H. B. HAAG.

Stammering and Allied Disorders. By C. S. BLUEMEL, M. A., M. D., F. A. C. P., M. R. C. S. (Eng.) New York. The Macmillan Company. 1935. 182 pages. Cloth. $2.00.

For more than two thousand years the problems of those handicapped by speech defects have been the subject of discussion by men of science. Hippocrates, Aristotle, Plutarch, Galen and Cicero of ancient times, and more recently Chervin, Liebman, Froeschel, Dejerine Munsterberg, Cannon, Janet, Head, Elliott-Smith, Charcot, Kraeplin, and others have written about stammering and allied disorders. However, until the past two decades, practically the only persons engaged in speech therapy have been quacks and incompetents quite lacking in the necessary scientific and pedagogical training. This may be due largely to the fact that the subject has seemed to lie outside the usual provinces of medicine and pedagogy.

The author of "Stammering and Allied Disorders" presents in this book a simple treatise on the etiology of stammering. His theory differs very little from others which are based on present knowledge of the conditioned reflex. He contrasts and reconciles it with those theories most widely used today as a basis for therapy.

XUM

Neurological theories of stammering invoke conflict as the basis of speech disorders. In this respect they run parallel to a number of psychological theories. This is not a coincidence beecause it actually appears that conflict lies at the seat of the difficulty. As viewed by the author, however, the conflict is one that occurs between the conditioned reflex of speech and inhibition. When there is no inhibition, speech proceeds fluently and uninterruptedly. When there is complete inhibition, speech ceases entirely and mutism ensues. It is only when there is partial inhibition that stammering results.

The book ends with a chapter on treatment which has some helpful suggestions but is by no means as complete as one might wish. Among the most useful suggestions is an outline of what to do when stammering first begins.

There are more than half a million stammerers in the United States who present a practical problem and a challenge to everyone interested in the correction of personality and behavior disorders. The field of prevention calls to us even more strongly, because most cases of stammering need not begin at all, or, if begun, may be much more easily arrested or cured in the early stages than after the defect has become more definitely a part of the individual's personality.

HARVIE DEJ. COGHILL, M. D.

Doctors and Juries. The Essentials of Medical Jurisprudence. By HUMPHREYS SPRINGSTON, of the Detroit Bar, Philadelphia. P. Blakiston's Son & Co., Inc., 1935. Octavo of 155 pages. Flexible fabricoid. Price, $2.00 net.

The author of this little book in his preface states that it is "for doctors who desire to know something of the legal aspects of their profession and for lawyers and others who wish information concerning the relationships of the law with the practice of medicine."

While the book is written in language that is remarkable for its lack of technical terms, particularly when dealing with two fields so filled with technical terms, it falls far short of the goal which the author has fixed for himself in the preface. While the book is divided into many chapters, it, in fact, could really be divided into two parts as it deals principally with the Law of Malpractice and with Insanity.

The author's treatment of the Law of Malpractice is very good, though there are certain errors which invariably creep into any general statements of a rule of law. It is of unquestioned value to the doctor who desires to take all precautions which he can against the institution of any suits against him for malpractice. Its value to the lawyer, however, in the trial of such an action would be but slight.

Chapter XV dealing with privileged communications contains the statement that "The law forbids disclosing any information acquired by a physician while attending a patient in a professional capacity and which was necessary to enable him to act in that capacity." While this may be the rule in Michigan where the author lives, it is not a correct statement of the common law in the absence of any statutory provision making such communications privileged. In Virginia, for instance, a physician may be summoned by either party of a litigation and compelled on the witness stand to disclose the results of his examination of a patient, assuming that the evidence is otherwise proper. Of course, a physician cannot be required to disclose any information which he may have acquired concerning a patient while attending him in a professional capacity, other than on the witness stand.

The second part of the book dealing with insanity is the opposite of the first part in that it is of real value to the lawyer, while I doubt that it is of material value to the doctor. It gives the lawyer a clearer picture of the kinds of insanity recognized by physicians.

While the above remarks are not particularly complimentary to this work, I do feel, however, that both doctors and lawyers would profit by a reading of the book. Some day we may yet have a book which will reach the high goal the author set out for himself in his preface.

EPPA HUNTON, IV.

Virginia Medical Monthly

Founded by LANDON B. EDWARDS, M. D., April, 1874
Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
WYNDHAM B. BLANTON, M. D., *Editor*
AGNES V. EDWARDS, Richmond, *Business Manager*

PUBLICATION COMMITTEE
WYNDHAM B. BLANTON, M. D., Richmond, *Chairman*
J. H. NEFF, M. D., University H. A. TABB, M. D., Gloucester

All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance. Single Copies 25c.

VOLUME 62 JULY, 1935 No. 4

Editorial

Dessert Before Soup.

We are accustomed to hear teachers of medicine deploring the many shortcomings of medical education. Now they complain that medical students are not being taught the philosophy of medicine. We assume that by that phrase they mean certain general conceptions of medicine systematically arrived at with particular stress upon their practical application.

Education is not a new concern of the human race. In one form or another we have been subjected to the educational process since the dawn of civilization, but each generation thinks that it does things better than the preceding one. Latterly we have been busy trying to make education attractive and easy. We have fallen for short cuts and quick results and, speaking enthusiastically of practical learning, have turned up our noses at theoretical knowledge. In the first grade a child learns to read before he is taught his letters, in music he learns to play before he practices his five finger exercises.

In medicine the same effort at quick and attractive results is fomenting trouble. Curriculum builders are constantly paring down the old hard preclinical courses, regarded as irreducible ten years ago. Today, for instance, the student of anatomy takes hardly more than a Cooke's Tour through that once most difficult and exacting of medical courses. It seems to be the ambition of modern teachers to have a stethoscope dangling from the ears of their students before they know the use of the dissecting scalpel. Little regard is paid to medical knowledge that is not immediately practical. The former tedious years in the basal sciences, months of hard work in anatomy, physiology, chemistry, pharmacology and pathology are considered worth nothing if they keep the student back from early contact with the patient. The ambition of the modern medical school does not appear to be confined to bringing the student and the sick man into intimate contact from the day the would-be doctor first crosses the threshold of the medical school, but it envisions also a strange sleight of hand, a bit of pedagogical leger-de-main by which four years of a crowded medical curriculum will not only turn out students who have learned something of the structure of the body and how the machine runs, something of the breakdown of this complicated apparatus and what may be done to put it together again, but will inculcate in them a something called the philosophy of medicine. They hope to implant this state of mind in the applicant for a medical degree before he has experienced the chastening effect of trial and error, before he has undergone the mellowing influence of experience, before he has gained that perspective which until now has been held to be entirely a coefficient of time

and experience. They go merrily on, turning things upside down, putting third year men in hospital wards, turning fourth year men out of hospital wards into the so-called richer experience of the outpatient department, and in divers other ways trying to serve the dessert before the soup.

Where There is no Vision, the People Perish.

The American Medical Association has finally got round to appointing a committee to determine what position the Association should take concerning the question of birth control. Whether this action on the part of the Association has any bearing upon the attitude the Medical Society of Virginia should take is a matter for its officers to decide. It must be apparent from a recent poll taken by the MONTHLY and the activity of several birth control clinics in the State that the medical profession of Virginia is overwhelmingly in favor of the principle of birth control. Whether or not organized medicine in the State recognizes its obligation to furnish leadership for the movement, the fact remains that doctors as individuals are already actively engaged in the practical application of this important, and in many cases necessary, procedure.

Another Indication for Sympathectomy.

Surgery is the least static branch of medicine. Formerly our confreres of the scalpel were limited in their endeavors to the extremities and the surface of the body, but the frequency of war and other hazards of life made even this no doubt profitable. With advancing civilization and the peaceable fruits of righteousness this sort of surgery was due to all but pass away, and it would have, had not the automobile and the new hazards of modern industry made traumatic surgery once more good business. When the discovery of anesthesia and aseptic technic opened up the body cavities to surgical invasion, the cutting art seemed to come into its own. But the surgeon's very prowess was his undoing, and abdominal surgery as we once knew it may be said to be in full retreat. Not that the abdomen is not invaded every day on one mission or another, but many surgical procedures of yesterday are no longer countenanced by those who exercise any control over the activities of this branch of medicine. Good surgeons have ceased to tack up ptotic organs. They now heed the voice of conscience in the matter of oophorectomy, are less keen to excise the chronic appendix, are less meddlesome with gastric anatomy and physiology, and show less confidence in the extirpation of every suspicious gall-bladder. But surgery may be said to be in bold advance on other fronts, notably in the thorax and in the brain. For the moment the possibilities of surgery of the sympathetic nervous system has captured the imagination. In some instances the procedure has seemed well worth trying. In others it has been but a shot in the dark. Sympathectomy has been employed for a number of different conditions, for example, in epilepsy, exophthalmic goitre, glaucoma, Hirschsprung's disease, Raynaud's disease, paralysis agitans, arthritis, and angina pectoris. Recently there have been several reports of the successful treatment of retinitis pigmentosa by cervical sympathectomy. Other reports have been less enthusiastic. There are signs that ophthalmologists generally are encouraging the victims of this disease to submit to the surgical experiment. Sympathectomy in good hands does not appear to be a hazardous operation, and in dealing with a disease of such gloomy prognostic outlook, any procedure that offers the least hope should probably be recommended.

Myasthenia Gravis.

There are some diseases—due to their dramatic manifestations and newspaper publicity—which the patient and his friends diagnose rightly or wrongly more frequently than the doctor. Myasthenia gravis appears to be such a disease. The physician recognizes this as a rare affection of the musculature of the body, apparently induced by some antecedent acute infection, manifested clinically by ptosis of the eyelids, double vision, weakness of phonation, difficulty in deglutition, progressing to general muscular incapacity, but with a noticeable tendency to improvement with rest. Many persons, especially health-conscious, newspaper-reading persons, have come to picture every case of easy fatigability or unaccountable weakness as heralding the onset of this dread disease. Perhaps it is a yielding to the pressure of the popular imagination rather than their pioneer spirit that has led physicians to prescribe the amino acid, glycocoll, not only in true myasthenia gravis but in a great variety of other complaints whose resemblance to the real disease is only in the outstanding complaints of weakness and fatigability.

Myasthenia gravis should of course be recognized early by the physician and all of the measures known

to be effective, strychnine, extract of the cortex of the adrenal, ephredrine, and glycocoll, should be employed. But all cases of muscle flabbiness and undue fatigue are not myasthenia gravis and it is questionable whether for them glycocoll, which bears directly upon the chemical disarrangements of that disease, creatin-creatinine output and muscle metabolism, is of the slightest value.

Hospital Insurance.

We understand that movements are on foot looking to the establishment of hospital insurance in several Virginia cities. Probably the most complete realization of the plan at the present time is about to be effected in Richmond where Grace Hospital already advertises its readiness to accept patients on this basis. Perhaps an even more significant insurance movement in Richmond is that of the Retreat for the Sick, the Johnston-Willis, the Memorial, St. Elizabeth's and Stuart Circle Hospitals, which jointly plan to offer hospital insurance. The contract under which they propose to operate offers to the insured hospital care, routine nursing, operating or delivery room procedures including anesthesia, routine floor medicines and dressings. A maximum of twenty-one days is allowed in the hospital, covering not more than five separate admissions. This service is offered "in consideration of an enrollment fee of one dollar and of an additional sum of eighty-five cents per month payable in advance annually, semi-annually, quarterly, or monthly as may be determined for the employed group to which the subscriber belongs." The important feature of this plan is that it offers the insured not only the free choice of hospital but also the free choice of physician, a point often emphasized in the discussion of all types of medical insurance by the American Medical Association.

The North Carolina Epidemic.

Acute anterior poliomyelitis is said to be prevalent in North Carolina. At this writing more than a hundred cases have been reported in the state. The situation is alarming because it is unusual for epidemics of this disease to make as much headway as this so early in the season. Very few cases have been reported in Virginia to date, although several have appeared close to the North Carolina line. Physicians will want to be on the lookout for the manifestations of the disease in its preparalytic phase—fever, headache, stiffness of the neck, tremors, vomiting, apathy and retention of urine—and they will be thinking how they can most expeditiously secure convalescent serum, the most effective therapeutic procedure thus far discovered.

Department of Clinical and Medical Education of the Medical Society of Virginia

Pediatric Clinic in Southwest Virginia.

The Postgraduate Clinic in Pediatrics, with Dr. S. L. Ravenel, Greensboro, N. C., as instructor, held its first meeting at Christiansburg, June 19th, in the New Altamont Hospital. The following doctors were present:

Dr. Clyde F. Bedsaul, Floyd.
Dr. S. J. Beeken, Cambria.
Dr. R. M. DeHart, Christiansburg.
Dr. J. J. Giesen, Radford.
Dr. Wm. K. Lloyd, Christiansburg.
Dr. C. F. Manges, Blacksburg.
Dr. G. W. Morse.
Dr. S. H. Nixon, Christiansburg.
Dr. J. B. Porterfield, Christiansburg.
Dr. A. M. Showalter, Christiansburg.

Mr. Saunders, a student at the Vanderbilt School of Medicine, and Mr. C. R. Woolwine, a student at the Medical College of Virginia, were present as visitors. Meetings will continue Wednesday evenings and Thursday afternoons for five weeks.

Preparations are underway for other clinics in July in Norfolk, Portsmouth and Eastern Shore areas.

The Postgraduate Clinic at the Medical College of Virginia,

Conducted by the College in cooperation with the Department of Clinical and Medical Education of the Medical Society of Virginia, was held again this year in connection with the Stuart McGuire

Lectures. In addition to the attendance of members of the staff, a number of physicians who did not register, and senior medical students, there were registered for the Clinic fifty-one men from Virginia and adjoining states. The interest in the Clinic was good.

The following is the list of names of physicians who registered for the Clinic:

Dr. J. E. Raby, Tarboro, N. C.
Dr. J. F. Thaxton, Tye River, Va.
Dr. John Hundley, Lynchburg, Va.
Dr. J. O. Mathews, Clinton, N. C.
Dr. B. L. Quarles, Newport News, Va.
Dr. J. A. Rucker, Bedford, Va.
Dr. F. D. Wilson, Norfolk, Va.
Dr. Marshall Payne, Staunton, Va.
Dr. Harvie Baker, Norfolk, Va.
Dr. C. F. Manges, Blacksburg, Va.
Dr. W. C. Yeatts, Danville, Va.
Dr. S. E. Gunn, Hopewell, Va.
Dr. A. E. Turman, Richmond, Va.
Dr. D. M. Kipps, Front Royal, Va.
Dr. W. C. Caudill, Pearisburg, Va.
Dr. C. H. Iden, Berryville, Va.
Dr. G. C. Amory, Hilton Village, Va.
Dr. Grant Elliott, Orange, Va.
Dr. L. C. Haynes, Mt. Jackson, Va.
Dr. H. B. Dameron, Laurel, Md.
Dr. N. G. Wilson, Norfolk, Va.
Dr. H. W. Pritchett, Danville, Va.
Dr. P. W. Miles, Danville, Va.
Dr. J. J. Neal, Danville, Va.
Dr. R. H. Jones, Montgomery, W. Va.
Dr. O. F. Mitchell, Franklin, Va.
Dr. J. W. Wilkins, Mt. Owen, N. C.
Dr. J. H. Cutchin, Whitakers, N. C.
Dr. B. A. Hopkins, Stuart, Va.
Dr. F. T. Cassiday, Fredericksburg, Va.
Dr. N. B. Jeter, Covington, Va.
Dr. A. B. Sloan, Mooresville, N. C.
Dr. C. L. Neale, Fort Sam Houston, Tex.
Dr. R. H. Pretlow, Suffolk, Va.
Dr. W. J. Ozlin, South Hill, Va.
Dr. G. B. Robertson, Jackson, N. C.
Dr. B. W. Wilkinson, Clarksburg, W. Va.
Dr. J. W. Smith, Hayes Store, Va.
Dr. C. O. Dearmont, White Post, Va.
Dr. D. W. Ruffin, Ahoskie, N. C.
Dr. J. B. Ruffin, Ahoskie, N. C.
Dr. H. C. Odom, Ahoskie, N. C.
Dr. C. B. Bowyer, Stonega, Va.
Dr. Thos. F. Gill, Richmond, Va.
Dr. R. L. Raiford, Franklin, Va.
Dr. John W. Martin, Roanoke Rapids, N. C.
Dr. Ruth S. Mason-Grigg, Petersburg, Va.
Dr. J. M. Habel, Jetersville, Va.
Dr. F. P. Fletcher, Richmond, Va.
Dr. G. S. Fultz, Butterworth, Va.
Dr. Ennion Williams, Richmond, Va.

Proceedings of Societies

The Norfolk County Medical Society,

At its annual meeting on June 3rd, installed Dr. James W. Hunter as president and elected Dr. Walter B. Martin as president-elect, and Dr. Claiborne Willcox as vice-president. Dr. Lockburn B. Scott was re-elected secretary-treasurer for his sixteenth consecutive term. All officers are of Norfolk. At this time, delegates and alternates to the State Society meeting in October were also named.

The Wise County Medical Society,

At its annual meeting, elected Dr. T. J. Tudor, of Norton, as president. Dr. G. T. Foust, also of Norton, was elected secretary to succeed Dr. Culbertson who resigned at the first of the year due to his various other duties.

Joint Meeting.

The Warwick County Medical Society and the Peninsula Dental Society held their annual get-together as a dinner meeting at the James River Country Club on May 14th. The president of the Warwick County Medical Society, Dr. George G. Hankins, of Newport News, presided and introduced the speaker of the evening, Dr. Fletcher D. Woodward, of the University of Virginia. Dr. Woodward gave an interesting paper, demonstrated by lantern slides, entitled "The Management of Recent Fractures of the Nose and Sinuses."

The Clinch Valley Medical Society

Held its regular meeting at the Lonesome Pine Country Club (near Norton, Va.), on May 24th, thirty-eight members being present. Luncheon was served to all members and invited guests, following which there was a live discussion on State Medicine, Social Medicine, and Compulsory Sick Insurance led by Dr. Frank Smith, President, Medical Society of Virginia; Dr. Alex. F. Robertson, Jr., Chair-

man, Medical Economics Committee of the State Society, and Dr. I. C. Riggin, State Health Commissioner. As a result of this meeting, a committee was appointed to draw up resolutions and present same to the House of Delegates at the next meeting of the Medical Society of Virginia. Norton was selected as the place for the September meeting.

Dr. W. R. Williams, of Richlands, is president of this Society and Dr. C. B. Bowyer, of Stonega, is secretary.

The James City-New Kent County Medical Society,

At its meeting in June elected delegate and alternate to the Norfolk meeting of the Medical Society of Virginia, and decided to have the annual picnic on the York River on the first of August. As is its custom, in October there will be a night meeting to which the doctors will bring their wives, thus making this a social meeting.

Dr. B. I. Bell, Williamsburg, is president and Dr. L. V. Henderson, also of Williamsburg, secretary of the Society.

News Notes

Commencement Exercises of Virginia's Medical Schools.

MEDICAL COLLEGE OF VIRGINIA

The ninety-seventh Commencement exercises of the College opened with Student Night and a dance at the John Marshall Hotel, on Saturday, May 25th. The baccalaureate sermon on Sunday was by Rev. J. Blanton Belk, D. D., at Grace Covenant Presbyterian Church. Alumni day followed on Monday the 27th with the usual golf tournament in the afternoon and the annual dinner in the evening. At this time, Dr. Karl S. Blackwell, Richmond, was elected president for the coming year, succeeding Dr. Clifton M. Miller, also of Richmond, Dr. Paul F. Whitaker, Kinston, N. C., was elected first vice-president and Dr. F. H. Beadles, Richmond, was re-elected treasurer. On Tuesday there was a buffet luncheon for the Board of Visitors, Faculty, Alumni and Senior Classes at Cabaniss Hall, and the final exercises were held that evening at 8:00 P. M. at the Mosque Theater. At this time Honorable George C. Peery, Governor of Virginia, delivered the address, and displomas were awarded seventy-six graduates in medicine, fifteen in dentistry, seven in pharmacy, and thirty-one in nursing. Following the recessional, the annual reception and dance were held at the John Marshall Hotel.

The names of the graduates in medicine with hospital appointments are as follows:

MEMORIAL HOSPITAL, RICHMOND—Drs. Solomon Disick, Brooklyn, N. Y.; Joseph Moore Dixon, Roanoke; Lester Edwin Dunman, Mullens, W. Va.; Ralph M. Lechausse, Madison, Wis.; Soon Tai Ryang, Songdo, Korea; Hack Urquhart Stephenson, Jr., Richmond; Thomas Duval Watts, Clifford; Washington Carlyle Winn, Keysville, and Alfred Robert Stork, Charleston, W. Va.

STUART CIRCLE HOSPITAL, RICHMOND—Drs. Benjamin Randolph Allen, Richmond; George Steel Bowers, Richmond, and James Quincy Gant, Jr., Columbus, Ohio.

SHELTERING ARMS HOSPITAL, RICHMOND—Dr. John Robert Bender, Hubert, N. C.

JOHNSTON-WILLIS HOSPITAL, RICHMOND—Drs. Hunter B. Frischkorn, Jr., Richmond; Wellford Claiborne Reed, Richmond, and Eugene Bowie Shepherd, Richmond.

ST. LUKE'S HOSPITAL, RICHMOND—Drs. James Martin Habel, Jr., Jetersville, and Clarry Clyde Trice, Louisa.

SAINT ELIZABETH'S HOSPITAL, RICHMOND—Dr. John D. Hamner, Richmond.

GRACE HOSPITAL, RICHMOND—Dr. Edmund Moseley LaPrade, Richmond.

THE TUCKER SANATORIUM, RICHMOND—Dr. John Richard Saunders, Saluda.

SAINT VINCENT'S HOSPITAL, NORFOLK—Dr. John Emanuel Alexander, Norfolk.

NORFOLK PROTESTANT HOSPITAL, NORFOLK—Drs. William Holmes Chapman, Jr., Smithfield; Wayland Nash McKenzie, Norwood, N. C., and William Roberts Tyson, Norfolk.

BLUE RIDGE SANATORIUM, CHARLOTTESVILLE—Dr. Hugh Stephenson Edwards, Petersburg.

MARTHA JEFFERSON HOSPITAL, CHARLOTTESVILLE —Dr. Mason Cole Rowe, Montgomery, Ala.

CHESAPEAKE AND OHIO HOSPITAL, CLIFTON FORGE —Drs. Hermon Keith Herrin, Evergreen, N. C., and Cameron Farquhar McRae, Richmond.

GEORGE BEN JOHNSTON MEMORIAL HOSPITAL, ABINGDON—Drs. Herman Henry Hines, Bristol, and Sam Milchin, Richmond.

SHENANDOAH HOSPITAL, ROANOKE—Dr. Rupert Wendell Powell, Morgantown, W. Va.

LEWIS-GALE HOSPITAL, ROANOKE—Drs. William Thomas Pyles, Roanoke, and Jennings Bryan Spinks, Charleston, W. Va.

LYNCHBURG HOSPITAL, LYNCHBURG—Dr. Angelo Joseph Villani, New Haven, Conn.

STAATS HOSPITAL, CHARLESTON, W. VA.—Dr. Herbert Mather Beddow, Charleston, W. Va.

CHARLESTON GENERAL HOSPITAL, CHARLESTON, W. VA.—Dr. Charles Eugene Watkins, Charleston, W. Va.

CHESAPEAKE AND OHIO HOSPITAL, HUNTINGTON, W. VA.—Dr. Carroll Edward Lee Easterday, Union Bridge, Md.

UNITED STATES MARINE HOSPITAL, NEW ORLEANS, LA.—Drs. Chai Chang Choi, Songdo, Korea, and James Carl Trivett, Georges Fork.

BARONESS ERLANGER HOSPITAL, CHATTANOOGA, TENN.—Drs. Leon A. Dickerson, Scarbro, W. Va., and Max Leonard Holland, Logan, W. Va.

WATTS HOSPITAL, DURHAM, N. C.—Drs. Jesse Burns Earle, Stovall, N. C., and Woodrow W. Tyson, Mebane, N. C.

HIGHSMITH HOSPITAL, FAYETTEVILLE, N. C.—Drs. Samuel Leon Elfmon, Richmond, and Samuel Levine, Swan Lake, N. Y.

REX HOSPITAL, RALEIGH, N. C.—Dr. Holland Thomas Myers, Lexington, N. C.

JAMES WALKER MEMORIAL HOSPITAL, WILMINGTON, N. C.—Dr. Bennette Edward Stephenson, Jr., Weldon, N. C.

CITY MEMORIAL HOSPITAL, WINSTON-SALEM, N. C. —Dr. Ayer Crouch Whitley, Stony Point.

HOLY NAME HOSPITAL, TEANECK, N. J.—Dr. Charles Neil Eckerson, Charleston, W. Va.

SAINT BARNABAS HOSPITAL, NEWARK. N. J.—Dr. George Adrian Glass, Carteret, N. J.

ENGLEWOOD HOSPITAL, ENGLEWOOD, N. J.—Dr. Cornelius Edward Hagan, Jr., Lynbrook, Long Island, N. Y.

CHRIST HOSPITAL, JERSEY CITY, N. J.—Dr. Edison Earl Ritter, Salem, W. Va.

SAINT JOSEPH HOSPITAL, PATERSON, N. J.—Dr. Seymour Schotz, Paterson, N. J.

THE WOMAN'S HOSPITAL, CLEVELAND, OHIO—Dr. Alice Winifred Elliot, Youngstown, Ohio.

UNIVERSITY HOSPITALS, PITTSBURG MEDICAL CENTER, PITTSBURG, PA.—Dr. Edwin Patterson Ewers, Pittsburg, Pa.

SAINT JOSEPH HOSPITAL, READING, PA.—Dr. LeRoy Clark Fergus, Wilmington, N. C.

THE HOSPITAL OF THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, PHILADELPHIA, PA.—Dr. H. Aurelia Gill, Richmond.

SAINT VINCENT'S HOSPITAL, ERIE, PA.—Dr. Rector Sells Legarde, Damascus.

THE WOMAN'S HOSPITAL OF PHILADELPHIA, PHILADELPHIA, PA.—Dr. Esta Joyce Levy, Suffolk.

SAINT MARY'S HOSPITAL, SAN FRANCISCO, CALIF. —Dr. John William Linfesty, Long Beach, Calif.

STATE OF WISCONSIN GENERAL HOSPITAL, MADISON, WIS.—Drs. John Phillip Lynch, Jr., St. Petersburg, Fla., and Reno Russell Porter, Richmond.

HARPER HOSPITAL, DETROIT, MICH.—Dr. Louis Moosey, Monongah, W. Va.

NORTHERN PACIFIC BENEFICIAL ASSOCIATION HOSPITAL, TACOMA, WASH.—Dr. Frederico Hernandez Morales, Vega Alta, Puerto Rico.

BETH EL HOSPITAL, COLORADO SPRINGS, COLO.— Dr. David Pollack, Columbus, Ohio.

SAINT LUKE'S HOSPITAL, CEDAR RAPIDS, IOWA— Dr. Solomon Abraham Rabinowitz, Brooklyn, N. Y.

SAINT FRANCIS HOSPITAL, HARTFORD, CONN.— Dr. Leo Louis Tylec, Meriden, Conn.

THE MERIDEN HOSPITAL, MERIDEN, CONN.—Dr. Harold Wayne Ward, Clay, W. Va.

UNITED STATES PUBLIC HEALTH SERVICE—Dr. William Haney Matthews, Dante.

Other graduates are:

Dr. Charles Atlas Bland, Richmond.

Dr. James Dudley Brown, Summerville, W. Va.

Dr. David Patton Burleson, Jr., Spruce Pine, N. C.

Dr. Louis Lovenstein, Richmond.

Dr. James Talton O'Neal, Amelia.

Dr. John Joseph Sperandeo, Brooklyn, N. Y.

UNIVERSITY OF VIRGINIA

The Department of Medicine held its commencement exercises in conjunction with those of the other departments of the University and this was a gala occasion as usual. The class dance was held on the evening of June the 7th and alumni reunions which began on Friday continued through Saturday, with a barbecue luncheon, baseball game, class and departmental banquets, and an informal dance in the evening. Reverend E. McNeill Poteat, Jr., D. D., of Raleigh, N. C., gave the baccalaureate sermon on Sunday and that evening there was an organ recital in the McIntire amphitheatre.

Monday was again a busy day for the alumni, this being the time at which the class of '35 was welcomed to the organization. In the afternoon President and Mrs. Newcomb held a reception at their home for the faculty, alumni, classes of '35, and visitors. Following the Phi Beta Kappa address that evening, there was the usual alumni ball. Class exercises were held on Tuesday morning and the final exercises at which degrees were awarded were at 5:30 that afternoon. Dr. David R. Lyman, Wallingford, Conn., of the medical class of '99, gave the commencement address, after which three hundred and ninety graduates were awarded degrees, fifty-four of these being in the Department of Medicine.

Names of the medical graduates with hospital appointments are:

UNIVERSITY OF VIRGINIA HOSPITAL, UNIVERSITY—Drs. William Eugene Apperson, Madison Heights; Albert Emanuel Long, Bridgewater; Charlton Gilmore Holland, Jr., Danville; John Osborne McNeel, Mill Point, W. Va.; Jesse James Porter, Louisa; William Lyons Taliaferro, Hampton; Martin Robert Wisely, Waynesboro, and William Swope Wray, Northfork, W. Va.

JEFFERSON HOSPITAL, ROANOKE—Drs. Sheldon David Carey, Culpeper, and William Randolph Watkins, Halifax.

ROANOKE CITY HOSPITAL, ROANOKE—Dr. Brooke Baylor Mallory, Lexington.

SAINT VINCENT'S HOSPITAL, NORFOLK—Dr. Beverly Long Holladay, Suffolk.

CHESAPEAKE AND OHIO HOSPITAL, CLIFTON FORGE—Dr. John Walton Ross, Jr., Clarksville.

RETREAT FOR THE SICK, RICHMOND—Dr. Hyman Rock Sheintock, Petersburg.

CHURCH HOME AND INFIRMARY, BALTIMORE, MD.—Dr. John William Ashworth, Jr., Coeburn.

JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.—Dr. William Bennett Bean, Universtiy.

BALTIMORE CITY HOSPITAL, BALTIMORE, MD.—Drs. Alexander Gustavus Brown, III, Richmond, and Harwood Hugo Ritter, Charlottesville.

UNION MEMORIAL HOSPITAL, BALTIMORE, MD.—Drs. William Walker Butzner, Jr., Fredericksburg, and William Province McGuire, Winchester.

SINAI HOSPITAL, BALTIMORE, MD.—Dr. Alter Laibstain, Berkley.

VIRGINIA MASON CLINIC, SEATTLE, WASH.—Drs. Charles Lewis Bittinger, Gerrardstown, W. Va.; Howard Harman Curd, Welch, W. Va., and Paul Burns Haggland, Seattle, Wash.

ROPER HOSPITAL, CHARLESTON, S. C.—Dr. Richard Boxley Bowles, Clifton Forge.

TENNESSEE COAL AND IRON HOSPITAL, FAIRFIELD, ALA.—Dr. George Minor Caldwell, Radford.

MERCY HOSPITAL, CEDAR RAPIDS, IOWA.—Dr. Hugh Tucker Chelf, Jr., Culpeper.

SAINT LUKE'S HOSPITAL, ST. LOUIS, MO.—Dr. William Malvern Clopton, Chevy Chase, Md.

EMORY UNIVERSITY HOSPITAL, EMORY UNIVERSITY, GA.—Dr. George Cooper, Jr., Louisville, Ky.

NEW YORK CITY HOSPITAL, WELFARE ISLAND, N. Y.—Dr. Kenneth Cooper, Lynchburg.

NEW YORK HOSPITAL, NEW YORK, N. Y.—Dr. Byrd Stuart Leavell, Culpeper.

GOUVERNEUR HOSPITAL, NEW YORK, N. Y.—Dr. John Fulton McGavock, Universtiy.

BETH ISRAEL HOSPITAL, NEW YORK, N. Y.—Dr. Arthur Weinberg, Far Rockaway, N. Y.

JEWISH MEMORIAL HOSPITAL, NEW YORK, N. Y.—Dr. Herman Wolff, Lynchburg.

KINGS COUNTY HOSPITAL, BROOKLYN, N. Y.—Dr. Carl Louis Wilson, Boston, Mass.

MILLARD FILLMORE HOSPITAL, BUFFALO, N. Y.—Dr. Charles Lawrence Stinson, Buffalo, N. Y.

ORANGE MEMORIAL HOSPITAL, ORANGE, N. J.—Dr. Richard Anthony Cupaiuoli, Woodcliff, N. J.

MEDICAL CENTER, JERSEY CITY, N. J.—Dr. Alfred Leon Kruger, Norfolk.

WOMAN'S HOSPITAL OF PHILADELPHIA, PHILADELPHIA, PA.—Dr. Margaret DeRonde, Teaneck, N. J.

UNITED STATES PUBLIC HEALTH SERVICE, WASHINGTON, D. C.—Drs. Romeo Joseph Gentile, Suffolk; Robert Stocton McVaugh, Hockessin,

Del.; Roy Randolph Powell, White Plains; James Benjamin Shuler, Shenandoah, and Roland Harris Vaughan, Cardwell.

GARFIELD MEMORIAL HOSPITAL, WASHINGTON, D. C.—Dr. Edward Lee Hopewell, Strasburg.

SIBLEY HOSPITAL, WASHINGTON, D. C.—Dr. Harold Maurice Jackson, Leesburg.

DUVAL COUNTY HOSPITAL, JACKSONVILLE, FLA.—Dr. Floyd Kinzer Hurt, Marion.

LOUISVILLE CITY HOSPITAL, LOUISVILLE, KY.—Dr. Edward Valentine Jones, Jr., Newport News.

CINCINNATTI GENERAL HOSPITAL, CINCINNATTI, OHIO—Dr. Claude Marshall Lee, Jr., Charlottesville.

PARKLAND CITY HOSPITAL, DALLAS TEXAS.—Dr. Boyd Hawthorne Payne, Clifford.

WATTS HOSPITAL, DURHAM, N. C.—Dr. James Bannister Stone Perrow, Hurt.

NEWTON HOSPITAL, NEWTON LOWER FALLS, MASS.—Dr. Lewis Alexander Vance, Waynesboro.

CHARLESTON GENERAL HOSPITAL, CHARLESTON, W. VA.—Dr. George Clegg Williams, Coeburn.

INSTRUCTOR, DEPARTMENT OF PATHOLOGY, UNIVERSITY OF VIRGINIA—Dr. Frank William Foote, Jr., Hattiesburg, Miss.

Guest Speakers at Norfolk Meeting.

Dr. F. H. Smith, president of the Medical Society of Virginia, has invited Dr. Arthur C. Christie, of Washington, D. C., and Dr. James E. Paullin, of Atlanta, Ga., to be the guest speakers at the Norfolk meeting of the Society in October. Dr. Christie will speak before the general meeting on Tuesday evening, the 15th, and Dr. Paullin will give his address on Wednesday evening.

Those desiring to present papers and exhibits should advise this office, by August 20th, in accordance with the cards sent members the middle of June.

The Monticello Hotel is to be headquarters and it is suggested that reservations be made promptly, though there will be ample hotel accommodations in the local hotels for all who may be able to attend.

In making vacation plans, reserve a few days for the State meeting. The social contacts of these meetings adds much to the scientific interest of these occasions.

American Medical Association.

The eighty-sixth annual session of the Association was held at Atlantic City, N. J., June 10th-14th, with Dr. Walter L. Bierring, Des Moines, Iowa, as president. At this time, Dr. James S. McLester, of Birmingham, Ala., succeeded to the presidency. There was an attendance of close to 9,000, the registrations through Thursday having been 8,294. More than 175 doctors from Virginia attended, many of these being accompanied by their wives.

Virgina was represented in the House of Delegates by Dr. J. C. Flippin, University; Dr. Hugh H. Trout, Roanoke, and Dr. Wright Clarkson, Petersburg.

The Canadian Medical Association held its sessions in conjunction with those of the American Medical Association, and this added greatly to the interest of the meeting. In the Scientific Exhibits, Drs. Dudley C. Smith, W. A. Brumfield, Jr., and E. E. Barksdale, of the University of Virginia Medical School, received a certificate of merit in the Class II exhibits, for excellence of presentation of their exhibit illustrating practical epidemiology of syphilis.

The House of Delegates voted to hold the 1936 session in Kansas City, Mo., and named Dr. T. Tate Mason, Seattle, Wash., president-elect; Dr. Kenneth M. Lynch, Charleston, S. C., vice-president; Dr. Olin West, Chicago, secretary; Dr. Nathan B. Van Etten, New York, speaker of the House of Delegates, and Dr. H. H. Shoulders, Nashville, Tenn., vice-speaker of the House.

It is of interest to note that Dr. Mason, the president-elect of the A. M. A., is a native of Orange County, Va., and was graduated from the University of Virginia, Department of Medicine, in 1905. He first located in Philadelphia and later moved to Washington State where he is prominently identified with the social as well as the professional life of that section.

Did You Get Your Questionnaire?

A Questionnaire which should be of interest to every member of the Medical Society of Virginia has just been sent our full membership. The answer of each individual member is needed to make this poll of value. From the opinions expressed, the Medical Economics Committee wishes to prepare a report for presentation to the House of Delegates of the Society at our Norfolk meeting. The outcome of our action at that time may mean much to every doctor in Virginia.

XUM

Please fill out and return your Questionnaire *at once*. If you failed to receive your copy, one may be procured upon request sent the Society's office in Richmond.

Dr. and Mrs. W. Ambrose McGee,

Of Richmond, Va., left the first of June for Los Angeles, Calif., where Dr. McGee expects to take a course of several months in allergy as related to pediatrics under Dr. George Piness. During his absence, his practice is being cared for by Dr. Benj. E. Hodge, formerly a resident physician at Johns Hopkins Hospital, but more recently connected with the Rockefeller Institute for Medical Research in New York City.

Dr. Grey C. Hughes,

Class of '34, Medical College of Virginia, is at the Children's Hospital, Boston, Mass., where he is now beginning his second year of a two-year service in children's surgery.

Dr. Roshier W. Miller,

Professor of materia medica and therapeutics at the Medical College of Virginia, Richmond, has been elected to honorary membership in Rho Chi, the national pharmaceutical society. This is an honor in recognition of distinguished service rendered by Dr. Miller, who has been connected with the former University College of Medicine and the Medical College of Virginia for forty years.

Group Hospitalization Plan Approved for Richmond.

The city-wide group hospitalization plan which has been under consideration for some time was unanimously approved by the Richmond Academy of Medicine at its meeting on June 11th, and will be put into effect promptly. The plan is designed to provide a low cost hospitalization plan for groups of employed persons, and has already been approved by the directors of Johnston-Willis, St. Elizabeth's, Stuart Circle, Retreat for the Sick, Memorial and St. Philip Hospitals. The Attorney General of the State has formally ruled that the Medical College of Virginia hospitals may enter into this contract. The State Corporation Commission has also stated that if the plan now being worked out proves satisfactory, authority will be granted to proceed with this plan under the Securities Law. Commercialism is entirely eliminated and every effort will be made under the sponsorship of the Academy to put the plan upon the level of a true community service.

For the time being, this service will be limited to groups of ten persons who will constitute not less than 40 per cent of the employed force to which they belong, though smaller groups may be accepted by special agreement. These groups may include males and females, white or Negro, 60 years of age or under, within the restrictions prescribed. Enrollment fee will be $1.00, to be paid but once, and 85 cents a month. payable in advance.

Dr. Charles C. Canada,

A member of the class of '31, University of Virginia, Medical School, has recently located in the Professional Building, Staunton. Va., where he is specializing in pediatrics. Since graduation he has served a rotating internship in the Charity Hospital of Louisiana, New Orleans, on the Medical Service at the University of Virginia Hospital, and also on the Medical Service of the Infants and Children's Hospital in Boston.

Dr. Henry W. Decker,

Of Richmond, Va., was elected vice-president of the local chapter of the University of Richmond alumni at a luncheon meeting held May 31st.

Dr. Lewis C. Pusch,

For several years associate professor in the Department of Pathology, Medical College of Virginia, has located at York, Pa., where he has become pathologist to the York Hospital.

The Tulane Centennial Anniversary

Was celebrated in a gala four-day fete, June 8th-12th, at New Orleans, with prominent alumni and guests addressing the student body and visitors. It is interesting, historically, to note that the Medical College of Louisiana, which was the nucleus of the present university and the Tulane School of Medicine, was founded late in 1834 through the efforts of Dr. Thomas Hunt, of South Carolina, Dr. Warren Stone, of Vermont, and Dr. John M. Harrison, of Washington, D. C., who came South to fight an epidemic of cholera and yellow fever which was raging in New Orleans at that time. The Medical College of Louisiana was incorporated as the Medical Department of the University of Louisiana twelve years later, from which its name was later changed to the Tulane School of Medicine.

Medical College of Virginia News.

Dr. W. Lowndes Peple made the presentation ad-

XUM

dress on the occasion of the unveiling of the portrait of Dr. G. Paul LaRoque, which was the gift of Omega Upsilon Phi and Phi Beta Pi fraternities to the Medical College of Virginia. The exercises were held in the auditorium of the Richmond Academy of Medicine on Tuesday, May 28th. President W. T. Sanger, of the college, spoke briefly in receiving the portrait for the institution. Miss Marcia Silvette, of Richmond, was the artist. The portrait will be hung in the college library.

Among those attending the American Medical Association annual convention in Atlantic City were: Dr. Lewis E. Jarrett, superintendent of the Hospital division; Dr. Harvey B. Haag, professor of pharmacology; Dr. William B. Porter, professor of medicine; Dr. Fred J. Wampler, professor of preventive medicine and head of the outpatient department; Dr. Frederick B. Mandeville, professor of radiology, and Dr. H. Hudnall Ware, Jr., associate professor of obstetrics.

The outpatient department report for the month of May shows 5,873 patient visits made by 2,908 individual patients.

Dr. Frederick W. Shaw, professor of bacteriology and parasitology, attended the American Society of Clinical Pathologists in Atlantic City, June 7th-10th.

Dr. Lewis E. Jarrett, secretary of the alumni association, attended the annual meeting of the Virginia Pharmaceutical Association at Virginia Beach, June 17th.

The graduates of the College in medicine, dentistry, pharmacy and nursing, this year, represented sixteen states, two foreign countries, and thirty-three of the one hundred counties of Virginia.

News from University of Virginia, Department of Medicine.

On May 14th Dr. John H. Neff spoke before the Rockingham County Medical Association in Harrisonburg on the subject of Tumors of the Kidney. He also attended the meeting of the American Association of Genito-Urinary Surgeons at White Sulphur Springs from June 6th-8th, and read a paper on Congenital Canals and Cysts of the Genito-Perineal Raphe.

Dr. Grant Fleming, professor of public health and preventive medicine at McGill University, visited the Medical School on May 23rd.

Dr. J. R. McCord, professor of obstetrics and gynecology at Emory Medical School, visited here on May 26th.

On June 8th the Medical Graduates of the Class of 1925 presented to the University a portrait of the late Dr. John Staige Davis, professor of medicine from 1901 to 1927. The portrait is the work of Mr. Raymond Neilson, of New York, and was unveiled by Dr. Davis' grandson, John Staige Davis, IV. The exercises took place in the Medical School's library where the portrait will hang.

The American Gynecological Society

Held its annual meeting at Hot Springs, Va., May 27th-29th, under the presidency of Dr. Brooke M. Anspach, of Philadelphia. At this time, Dr. Benjamin P. Watson, New York City, was elected president for the coming year; Dr. William C. Danforth, Evanston, Ill., treasurer, and Dr. Otto H. Schwarz, St. Louis, Mo., was re-elected secretary. The place and date of next meeting will be named later.

Dr. J. Edwin Wood, Jr.,

Associate professor of internal medicine in the Department of Medicine, at the University of Virginia, was one of the guest speakers at the meeting of the Pacific Northwest Medical Association held in Spokane, Wash., June 27th-29th. He was invited to give three lectures, as follows: Recent Advances in the Study of Rheumatic Fever; Diuretics in the Treatment of Cardiac Edema; and Pregnancy and Hypertension.

Dr. John H. Thomas, Jr.,

Who has been interning at the Baltimore City Hospital, Baltimore, Md., since his graduation from the University of Virginia last year, is locating the first of this month at Greenville, Va., where he will be engaged in general practice.

Dr. Ross V. Patterson,

Dean and Sutherland M. Prevost Professor of Therapeutics at Jefferson Medical College, Philadelphia, was the recipient of the honorary degree of doctor of laws at the commencement exercises of Ursinus College, Collegeville, Pa., in June.

XUM

Dr. and Mrs. Jamie P. Scott,

Richmond, Va., have gone to Bedford, Va., where Dr. Scott will be engaged in general practice. He has been interning at Sheltering Arms Hospital, Richmond, since graduation from the Medical College of Virginia, in 1934.

Dr. Arthur S. Mann,

Class of '34, Medical College of Virginia, who has been interning at St. Vincent's Hospital, Norfolk, Va., has secured an internship at Memorial Hospital, Richmond, Va., for the coming year.

Dr. Irwin M. Nuckols,

Also an alumnus of the Medical College of Virginia, class of '34, who interned at St. Vincent's Hospital, Norfolk, located at Mount Sidney, Va., the first of June, where he is engaged in general practice.

Re-elected to City School Board.

Dr. Roshier W. Miller and Dr. Clifton M. Miller have been re-elected by the City Council as members of the Richmond, Va., City School Board, their new terms of office to begin July 1st.

Dr. M. D. Foster,

Who was recently located at Elkton, Va., has moved to Stanley, Va., for general practice.

Motion Pictures for Medical Groups.

Mead Johnson & Company, Evansville, Ind., has four groups of films (16 mm.) which may be borrowed without charge for showing by physicians to medical societies, medical students, hospital groups, etc. These groups deal with surgical, obstetrical, pediatric and laboratory subjects, and are offered as another Mead Service to the medical profession. Information in regard to these motion pictures may be secured from Mead Johnson & Company.

Dr. V. E. Lascara,

Of the class of '34, Medical College of Virginia, who served an internship at George Ben Johnston Memorial Hospital, Abingdon, Va., the past year, is on July the 1st entering upon a general internship at St. Francis Hospital, Wilmington, Del.

Dr. H. U. Stephenson Honored.

Early in June, upon the occasion of the fortieth anniversary of his graduation in medicine from the Medical College of Virginia, Dr. H. U. Stephenson, medical examiner of the State Industrial Commission, was the recipient of a very lovely tribute from the officials and employees of the Commission, in appreciation of his service among them. At an informal gathering in his office, they presented him with the four volumes of "R. E. Lee," by Dr. Douglas S. Freeman, the first volume of which was most fittingly inscribed and signed by all the officials and employees in his department.

West Virginia State Medical Association.

The annual meeting of the Association was held in Wheeling, early in May, under the presidency of Dr. R. H. Walker, of Charleston, with the largest attendance in his history. There was a registration of 441 or almost 40 per cent of its membership. Dr. Charles G. Morgan, Moundsville, was elected president; Drs. Ivan Fawcett, Wheeling, and Ward Wylie, Mullens, vice-presidents; and Dr. T. M. Barber, Charleston, was re-elected treasurer. Mr. Joe W. Savage, Charleston, is the executive secretary. The next annual session will be held at Fairmont.

Dr. William Tate Graham,

Richmond, Va., was given the honorary degree of doctor of science at the commencement exercises of Hampden-Sydney College in June.

Dr. John L. Jennings,

Who received an appointment as intern at the Wisconsin General Hospital, Madison, Wis., upon graduation from the Medical College of Virginia in 1934, will continue at that hospital, having been made orthopedic resident for the coming year.

Dr. E. V. Valz,

An alumnus of the University of Virginia and a member of the Medical Society of Virginia since 1906, has been transferred from the *U. S. S. Nevada* to the U. S. Marine Recruiting Station, Philadelphia, Pa.

Col. William L. Keller Honored.

President Roosevelt recently signed an act of Congress to give Col. Keller full active pay for the rest of his life, regardless of retirement, in appreciation of his valuable services. Col. Keller, of the Medical Corps of the Army, has been chief of the surgical service at Walter Reed General Hospital, Washington, for sixteen years, commanding officer of the hospital for several years, and director of surgery in the Army Medical School. He is an alumnus of the Medical College of Virginia, class of '99.

Dr. S. B. Nickels,

Recently of Big Stone Gap, Va., is now taking postgraduate work in internal medicine at the Medical College of Virginia hospitals in Richmond.

Orthopedic Day,

For a consideration of orthopedic problems, was sponsored by the Dixie Hospital of Hampton, Va., on May 30th, at which time, Dr. Thomas Wheeldon, of Richmond, and his associates presented an operative clinic in the morning and a dry clinic in the afternoon. Between sessions, luncheon was served at the hospital to twenty-six guests from the lower peninsula.

Dr. O. C. Brunk

Has been appointed police surgeon of Richmond, Va., to fill the vacancy caused by the death of Dr. Blanton L. Hillsman.

Doctors Interested in Baseball.

Dr. J. M. Emmett, Clifton Forge, Va., and Dr. I. T. Hornbarger, Hot Springs, Va., were recently elected president and secretary-treasurer, respectively, of the newly organized Alleghany Mountain Baseball League at Covington, Va.

Dr. Tiffany J. Williams,

Professor of obstetrics and gynecology at the University of Virginia, addressed the Obstetrical Section of the Norfolk County Medical Society on May 27th.

Dr. W. B. McIlwaine,

Pediatrician of Petersburg, Va., was the principal speaker on a broadcast sponsored by the American Legion post of Petersburg in observance of Mother's Day, his subject being "What Constitutes Adequate Maternity Care." Dr. McIlwaine stressed the need of prenatal care by competent doctors and nurses to make motherhood safe for mothers.

Dr. James K. Hall,

Richmond, Va., was awarded an honorary degree by the University of North Carolina, at its commencement exercises early in June.

Dr. M. T. Vaden,

Buena Vista, Va., was elected president of the Buena Vista Lions Club, at its organization meeting in May.

Virginia Alumni in Florida.

Dr. and Mrs. Joseph Lucinian, of Miami, Fla., recently entertained with a dinner party at the Royal Palm Club, that city, a number of the alumni of the University of Virginia and their wives, all residing in Miami. They were: Dr. and Mrs. Duncan Owens ('17), Dr. and Mrs. S. E. Chambers ('23), Dr. Don C. Eskew ('24), Dr. and Mrs. Herman Boughton ('25), Dr. and Mrs. T. O. Otto ('25), and Dr. and Mrs. J. Randolph Perdue (both of '32). Dr. Lucinian is of class of '24.

The Medical Society of the State of North Carolina

Held its annual meeting in Pinehurst in May, with Dr. Paul P. McCain, of Sanatorium, as president. At this meeting, Dr. Paul H. Ringer, Asheville, succeeded to the presidency and Dr. Charles F. Strosnider, Goldsboro, was named president-elect. The 1936 session will be held at Pinehurst also.

The American Proctologic Society,

At its annual meeting in Atlantic City, June 10th, elected Dr. Frank G. Runyeon, of Reading, Pa., president to succeed Dr. Louis A. Buie, of Rochester, Minn., Dr. Curtice Rosser, of Dallas, Texas, is secretary-treasurer.

Dr. Mildred Forman,

Class of '34, Medical College of Virginia, who has been interning at the Montgomery Hospital, Norristown, Pa., will go to Baltimore on July 1st to work in the clinics at Johns Hopkins under Dr. Emil Novak. While there, she also expects to have some experience in cystoscopy.

Dr. F. A. Snidow,

Who has been doing special work in obstetrics and gynecology at the University of Iowa, has recently returned to University, Va.

Married.

Dr. W. W. Wilkinson, La Crosse, Va., and Mrs. William E. Price, Lawrenceville, Va., June 11th.

Dr. James Porter Baker, Jr., and Miss Louise Herbert Rogerson, both of Richmond, Va., June 8th.

Dr. Joseph William Houck, University, Va., and Miss Katherine Kemp, Lynchburg, Va., June 1st.

Dr. Wellford Claiborne Reed and Miss Elizabeth Minor Lewis, both of Richmond, Va., May 29th. Dr. Reed is a member of the class of '35, Medical College of Virginia, and will intern at Johnston-Willis Hospital the coming year.

Dr. George Steel Bowers, Richmond, Va., and Miss Martha Clare Mathes, on June 5th. Dr.

Bowers is also a member of the class of '35, Medical College of Virginia, and received an appointment to intern at Stuart Circle Hospital, Richmond.

Dr. Prentice Kinser, Jr., and Miss Gladys Whitten, North Garden, Va., the latter part of May. Dr. Kinser has been interning at the University of Virginia Hospital.

Dr. Philip David Stout and Miss Julia Holston Slack, both of Bristol, Va.-Tenn., April 17th.

Dr. Benjamin Franklin Cozart and Miss Helen Rebekah Newell, both of Reidsville, N. C., May 18th. Dr. Cozart is a member of the class of '29, Medical College of Virginia.

Dr. Richard B. Easley, Huntington, W. Va., and Miss Mary F. Kellam, April 30th.

Jefferson Medical College News.

The 110th Annual Commencement was held on June 7, 1935. The valedictory address was delivered by Dr. Homer P. Rainey, President, Bucknell University, his subject being "The Relations of General and Medical Education."

The graduating class numbered 142 bringing the total number of graduates to 16,042. The graduates originated in twenty different states.

The graduating class of 1935 presented a portrait of the late Dr. Thomas Cook Stellwagen, Professor of Genito-Urinary Surgery, 1930-1935, to the College on April 4, 1935.

The following promotions and appointments in the teaching corps have been made during the past session: Warren B. Davis, M. D., Clinical Professor of Oral Surgery; Edward F. Corson, M. D., Associate Professor of Dermatology; Benjamin P. Weiss, M. D., Associate Professor of Neurology; Clifford B. Lull, M. D., Harry Stuckert, M. D., and Thaddeus L. Montgomery, M. D., Assistant Professors of Obstetrics; John T. Farrell, Jr., M. D., Assistant Professor of Roentgenology, and Roentgenologist to the Department of Anatomy; Henry B. Decker, M. D., Assistant Professor of Dermatology; Garfield G. Duncan, M. D., and A. Cantarow, M. D., Associates in Medicine; C. Fred Becker, M. D., Associate in Nervous and Mental Diseases; J. Bernard Bernstine, M. D., and James F. Carroll, M. D., Associates in Obstetrics; Baldwin L. Keyes, M. D., Associate in Psycho-Pediatrics.

A Venereal Disease Clinic

Has just been opened in Norfolk, Va., in accordance with a resolution adopted by the Norfolk County Medical Society about a year ago. This is a private clinic in charge of Drs. N. F. Rodman, Raymond Kimbrough and S. Bryan Pope. Routine Wassermanns are made on all cases and no charge is made for this service since the Health Department makes the tests. However, a charge of one dollar is made for neosalvarsan injections. This clinic is being operated for the purpose of giving satisfactory treatment for syphilis to those in the low income group, there being great need for this service since the closing of the syphilis clinic at St. Vincent's Hospital.

For Rent—

Office suite in Medical Arts Building, Richmond, Va. Phone 2-8140 or write No. 488, care the VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond, Va. (*Adv.*)

Obituary Record

Dr. Garland E. Faulkner,

South Boston, Va., died at his home in that place on May 30th following an illness of several months. He was forty-seven years old and, upon completion of his academic education, studied medicine at the University of Virginia from which he graduated in 1910. During the World War he served as a surgeon in the United States Navy after which he retired to South Boston and resumed private practice. He was one of the re-organizers of the Halcyon Hospital in South Boston after the death of Dr. Belt. He had been a member of the Medical Society of Virginia for some years. He is survived by his mother, a sister, and a brother.

Dr. James T. Leftwich,

A practicing physician at Highland Springs, Va., for the past twenty years, died suddenly at his residence on June 6th. Dr. Leftwich was prominent in medical and fraternal organizations, being a Mason, President of the Henrico County Board of Health, and a member of the Medical Society of Virginia and other organizations. He was an alumnus of the Medical College of Virginia, hav-

XUM

ing graduated from that institution in 1915. His wife survives him.

Dr. Henry Dewey Ribble,

Blacksburg, Va., died suddenly at his home on March 1st, death being due to cerebral hemorrhage. Dr. Ribble, who was a member of the Medical Society of Virginia, was eighty-two years of age.

Dr. James Hunt Royster.

The following memorial was read before a meeting of the Richmond Academy of Medicine on June 11, 1935:

Early on the morning of March 22nd, as he was preparing to leave his home to enter upon the day's work, Death in the guise of some cardiac catastrophe snuffed out the life of Dr. James Hunt Royster as suddenly as the flame is detached from the candle. He was, and he was not. Born at Townsville, North Carolina, on June 26, 1892, he had not yet reached the fullest manhood when the summons came.

His father was a physician before him, and early in life Dr. Royster had decided upon medicine as his own calling. In order to fit himself for the profession, he obtained a sound academic training. At the University of North Carolina, he was graduated with the degree both of Bachelor of Arts and Master of Arts in the class of 1913. His first two years in medicine were spent at the Medical College of Virginia, after which he entered Jefferson Medical College, from which he was graduated in 1917. Immediately he volunteered for service in the Medical Corps of the United States Navy, and as a Lieutenant he remained in the service of his country until 1921.

There was a naive reticence about those war years, and only his intimates who talked in low voices when lights were out and only the light of glowing coals coaxed men to talk, knew of his many dangers on convoy service in the North Sea and the Mediterranean. He was as beloved in the Navy as he was among all the other groups who knew him.

Soon after retirement from the Navy he became a member of the medical staff of Westbrook Sanatorium, where he gave himself so freely and so generously for the remainder of his days.

Dr. Royster was a dynamic personality whose thought was never of himself but always of others. He had the happy fortune of being able to give himself spontaneously, naturally, without apparent effort, and wholly unconsciously, to those in pain, sorrow and distress. His diagnostic judgment was sound, his understanding of human nature profound, his tolerance unfailing, and his sympathy unbounded. One seldom heard him give expression to thought of himself. In the Sanatorium his patients were devoted to him, and they trusted without the shadow of doubt to his interest in them and to his understanding of them.

He loved all people, and for him society was without stratifications. His professional interests and activities reached far beyond the Sanatorium. For several years he was a member, with Dr. Drewry and others, of the Board of Mental Hygiene that did so much good work amongst and for those in the Penitentiary. He labored with Dr. Drewry in creating and in confirming the interests of physicians and lay people in mental hygiene. No other two individuals did so much for that cause in Virginia. Dr. Royster was an alert attendant upon medical meetings; he participated in their activities; he was a diligent student, and he kept himself informed about the progress of medicine. Although he was shy and self-effacing, he associated genially with his friends, and easily with all others, and in the intimacy of such associations he acquired much knowledge of mankind that has never yet been typed. He loved the country, the fields, the woods, his dogs, the hunt, and the quiet, the natural, and the beautiful. In personal sickness and in that deep sorrow brought by the death of loved ones he was a steady support and a sympathetic friend. He was always busy, always quiet, always unhurried, always comforting, and never failing.

Two years and one month before his death he was married to Miss Louise Moss, the culmination of the love of his childhood, his young manhood, and of his mature years. He left no children, only splendid memories of a devoted husband and a friend to all the world.

He kindled and builded friendships as easily as some build fires, only these never grew dim nor died into ashes. He had a perfect gift for friendships, perhaps because he gave so much, so freely, and so continuously. Unconsciously, without art or effort, he walked into the hearts of men and women and won their affection and esteem. He will be missed in the profession, missed in his specialty and in his own hospital, but his going will leave an aching pang in the hearts of hundreds to whom he had endeared himself.

It is requested that this humble tribute to our friend and fellow member be written into the minutes of the Richmond Academy of Medicine and that a copy be given the VIRGINIA MEDICAL MONTHLY for publication.

Respectfully submitted,

J. K. HALL, *Chairman,*
R. FINLEY GAYLE,
W. LOWNDES PEPLE,
DEAN B. COLE.